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Implicit Theories of Aging: Predictions of Developmental Change in Parents versus Generalized Adults

by

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We accept this dissertation as conforming to the required standards

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Abstract

Two studies were conducted to investigate how normative conceptions of aging compare with adult children's expectations of change for their parents. In Study 1, the Implicit Theories of Aging Questionnaire (ITAQ) was developed to assess implicit theories of aging as pertaining to either one's mother, one's father, the average woman, or the average man. Respondents rated various aspects of everyday functioning as to (a) the direction and degree of expected change versus stability across the latter portion of the adult life course, (b) the estimated age of change onset, and (c) the target's ability to influence change. The second study replicated findings of the first, and extended it by exploring the relationship between implicit theories of aging and factual knowledge about the elderly as measured by Palmore's Facts on Aging Quiz. Results of the two studies indicated that people share highly similar beliefs about the direction, timing, and modifiability of aging-related change. For all four targets, respondents predicted more developmental change than stability and more losses than gains, but there was a strong optimistic bias in developmental predictions for parents. As compared to normative conceptions, parents were expected to undergo significantly fewer and significantly less severe declines in functioning. This optimistic bias did not appear to generalize to other belief components. Both parents and generalized adults were expected to undergo most functional loss during their mid-60s, and were thought to have some ability to influence loss. Judgments of modifiability seemed based in part on the perceived severity and timing of decline. Findings suggested that individuals may distinguish between aging-

related loss that occurs through the intensification versus waning of existing attributes and abilities. It was hypothesized that increasing proportions of falsely held beliefs about old age would be correlated with predictions of greater aging-related decline. However, there was no association between misconceptions of aging and developmental beliefs, suggesting a possible distinction between implicit notions of the aging process and group-level generalizations about old age. These results, their generalizability, directions for future research, and practical implications were discussed.

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Dedication

In Memory of Alex MacKenzie

Introduction

Overview

The present research focuses on individuals' subjective beliefs about aging-related change. The study of conceptions of old age and the elderly extends back across more than 40 years. The longevity of this research topic is owed, in part, to the multiplicity of theoretical perspectives and methodologies employed. Each has contributed to a considerable body of knowledge regarding the nature, antecedent conditions, and potential implications of how individuals view the "group that every person is eligible to join by virtue of living long enough" (Gatz & Cotton, 1994, p. 334).

This paper will begin with a review of the literature on conceptions of old age. The review will not include investigations of self-perceptions of aging, or cross-cultural differences in age perceptions. Although it will include studies published since 1953, there will be a concentration on work published since 1970.

These studies will be categorized according to what appears to have been their major conceptual focus. The concepts that will be used to categorize the literature include the notions of attitude, stereotype, belief, and implicit theories about aging.

By definition, an attitude is a broad, dispositional construct (Kogan, 1979) comprising affective, cognitive, and behavioral components, but it is widely accepted that an attitude is characterized primarily by its evaluative components (Eagly & Chaiken, 1993). Thus, attitudes may be considered essentially subjective appraisals, which refer to likes or dislikes (Crockett & Hummert, 1987).

The prevailing view is to distinguish between attitudes (as inherently evaluative) and beliefs, many of which seem devoid of positive or negative connotations. Old age

stereotypes involve beliefs and expectations about the personal attributes, behaviors, and feelings of older adults as a specific social group. Unlike an attitude, a stereotype is essentially descriptive, and not necessarily negative in nature (Braithwaite, Lynd-Stevenson, & Pigram, 1993).

Because measures of old age stereotypes typically involve the attribution of personality traits, for most of which the validity cannot be determined (Crockett & Hummert, 1987), stereotypical beliefs can be distinguished from other beliefs which are, in theory, verifiable through objective evidence. Objectively verifiable belief statements about older adults or normative aging are generally used to measure knowledge about aging.

The notion of implicit theories is another way of viewing individuals' subjective beliefs about aging-related change. Implicit theories of aging have been defined as "schemalike knowledge structures" concerning the perceived stability or change and modifiability of specific attributes across the adult life-span (Ross, 1989). Thus, implicit theories embody multidimensional and logically organized developmental beliefs about aging-related change. It seems likely that the objective verifiability of implicit theories may depend on the nature of the attributes in question, as well as the kind of scale used to rate perceived change. Several researchers have examined individuals' implicit notions of change in personality traits (e.g., Aaronson, 1966; Heckhausen & Baltes, 1991; Heckhausen, Dixon, & Baltes, 1989; Heckhausen & Krueger, 1993; Heckhausen, Hundertmark, & Krüger, 1992), whereas others have assessed perceived change in other areas of functioning, such as cognitive abilities (e.g., Fitzgerald &

Hyland, 1980; Ross, 1989; Rubin & Brown, 1975; William, Denney, & Schadler, 1983).

The present research consists of two studies examining people's implicit theories of aging as they are applied to generalized adults versus one's parents. The first study was an exploratory investigation of individuals' expectations of aging-related change in everyday functioning, as pertaining to the average man, the average woman, one's mother, and one's father. A multiple-target questionnaire was developed and administered to assess three components of developmental beliefs: (a) the direction and degree of expected change, (b) the perceived timing of expected change, and (c) the degree of perceived influence the target individual has over expected change. The purpose of the second study was to replicate the findings of the first, and to extend it by including a popular measure of factual knowledge about the elderly. A general discussion of findings across both studies will be followed by a deliberation of the generalizability of results, directions for future research, and practical implications.

Review of the Literature

Attitudes toward old age and the elderly.

Most early studies addressed a central question -- whether the elderly are the objects of widespread negative perceptions (Crockett & Hummert, 1987). In general, it was assumed that attitudes toward the elderly as a group influence judgments of and behavior toward older individuals, and that negative characterizations themselves contribute to the difficulties of aging.

By definition, an attitude is a broad, dispositional construct (Kogan, 1979), which can be viewed as an "organization of motivational, emotional, perceptual, and cognitive processes, with respect to some aspect of the individual's environment" (Bennett & Eckman, 1973, p. 577). Although it is widely agreed that an attitude embodies affective (feelings, emotions), cognitive (thoughts or beliefs), as well as behavioral aspects (action or intended action), it has been argued that the evaluative component is the critical feature of the attitude concept (Eagly & Chaiken, 1993). Attitudes toward specific entities are ordered along a bipolar continuum of valence (i.e., a positive vs. negative evaluation, bifurcated by a reference point of neutrality). The prevailing view is to distinguish between attitudes (as inherently evaluative) and beliefs, many of which seem devoid of positive or negative connotations. Thus, attitudes can be viewed as essentially subjective appraisals, which refer to likes or dislikes (Crockett & Hummert, 1987).

One of the earliest instruments developed to measure attitudes toward the elderly was the Attitudes Toward Old People (AOP) scale by Tuckman and Lorge (1953). In

his review, Lutsky (1980) identified several dimensions found in AOP evaluations of the elderly, such as those relating to physical and interpersonal characteristics, life satisfaction, and public representability. The AOP was widely criticized for confusing factually-based beliefs (e.g., that old people are lonely) with evaluative opinions (e.g., that old people should not marry) (e.g., Brubaker & Powers, 1976; Kogan, 1979). It was argued that a high score on the AOP may indicate an aversion for older people, or it may simply reflect an exaggeration of the restrictions that may in fact be more likely to occur with age.

Rosencranz and McNevin's (1969) Aging Semantic Differential (ASD) continues to be a popular generalized measure of attitudes toward the elderly. Rosencranz and McNevin identified three underlying dimensions in the ASD: (a) Instrumental-Ineffective (capable of actively pursuing goals, adaptive to change); (b) Autonomous-Dependent (contributing to the social system); and (c) Personal Acceptability-Unacceptability (friendly, sociable). Knox and Gekowski (1989) concluded on the basis of earlier work that the latter factor is a primarily evaluative dimension, whereas the other two are largely descriptive in nature.

Numerous reviewers have addressed the generic question, whether cultural perceptions are negatively biased toward the elderly as compared to younger age groups (e.g., Brubaker & Powers, 1976; Crockett & Hummert, 1987; Kite & Johnson, 1988; Kogan, 1979; Lutsky, 1980; McTavish, 1971). Results across studies were often contradictory and inconsistent, which some have attributed to both theoretical and methodological weaknesses inherent in much of this work (e.g., Brubaker & Powers,

1976). From their review, Crockett and Hummert (1987) concluded that overall, although generalized attitudes toward older adults have been found to be somewhat more negative than views of younger people, there is no evidence of widespread negative evaluation. That is, ratings of the elderly, while often less favorable than of younger people, still typically register on the positive end of attitudinal scales. Similarly, researchers often use the terms, positive versus negative, to describe mean scores that may not be statistically different from the neutral point on a Likert-type or Semantic Differential scale. Thus, the implicit conceptual focus in most attitudinal research has been on a generalized perception of how one age group differs from another, rather than on how any one age group is perceived in absolute terms.

The person perception paradigm has been widely employed for the indirect assessment of attitudes toward older adults. This approach is generally considered as having greater ecological validity than the use of generalized measures because subjects are provided with informational cues that are present in actual interactions with others (Kogan, 1979). Person perception refers to the aggregate processes involved in making attributional judgments about the external and internal states of other people (Nardi, 1973). Typically, person perception studies require respondents to infer the personal traits or attributes of specific stimulus persons on the basis of the physiognomic and/or verbal information provided. Demand characteristics are rendered less salient by embedding the critical cue (e.g., age) in other kinds of information. This method also allows for evaluation of the differential influence of, or interaction between, age cues versus other types of information provided (e.g., gender or health status).

Numerous person-perception studies have examined the relative salience of various target cues within a hypothetical work-related context. A meta-analysis led Kite and Johnson (1988) to conclude that smaller differences between perceptions of older adults and perceptions of younger adults are obtained in work-related contexts, as compared with laboratory-based research. Rosen and Jerdee (1976) reported significant target age effects on responses to a worker evaluation questionnaire that measured a hypothetical worker's perceived stability, performance capacity, potential development, and interpersonal skills. College students and realtors of varying ages viewed the average 60-year-old man as more stable, but less capable of effective employee performance and development than a 30-year-old man. However, none of the mean ratings for the 60-year-old were below the neutral midpoint of the scale.

Students in a study by Perry and Varney (1978) rated a hypothetical worker who varied by age (25 or 60 years old) and portrayed competence (average or high) on various employee effectiveness dimensions. Findings indicated that only the perception of relative competence influenced employee ratings: Workers of average competence were rated significantly lower overall than highly competent employees, regardless of worker age. At the same time, respondents expressed the beliefs that the older worker would be less quick to adopt new ideas and would make fewer contributions to the company than the younger worker. Similar effects of target competence and age on simulated worker evaluations have been reported in other studies (e.g., Connor, Walsh, Litzelman, & Alvarez, 1978; Craft, Doctors, Shkop, & Benecki, 1979; Locke-Connor & Walsh, 1980).

However, as Singer (1986) suggested, the extent of work-related age stereotyping may vary by professional domain. Gibson, Zerbe, and Franken (1993) asked employers from various white-collar, blue collar, and sales and service work settings to rate a younger, an older, and an ideal hypothetical worker on various work-related attributes. They found that employers, regardless of their own chronological age, rated older workers more favorably in areas related to experience, stability, and individual initiative but lower in potential for development than their younger counterparts. Younger workers were rated more positively by younger employers than by older employers, whereas older workers received higher ratings from older employers than from their younger counterparts. Moreover, there were numerous significant differences in the perceived importance attached to various attributes in the ideal employee as a function of organizational setting. Gibson et al. concluded that certain organizational contexts may be more inherently susceptible to age bias toward older or younger workers.

In another field study, Ray, McKinney, and Ford (1987) reported that licensed clinical psychologists demonstrated a significant age bias in their ratings of hypothetical older and younger clients. In general, these respondents viewed older clients as less ideal for their practices, and as manifesting disorders with poorer prognoses than younger clients.

An investigation by Erber, Szuchman, and Etheart (1993) suggested that the influence of some negative perceptions of older adults may, in some instances, be offset by the accompanying perception of other, compensating attributes. Participants rated

their preference for a younger or an older female neighbour, who varied in the number of her recent memory failures, to perform memory related tasks on their behalf. In general, highly forgetful older neighbours were preferred over highly forgetful younger neighbours. Although subjects were less likely to choose a forgetful neighbour to help them than a non-forgetful one, they were more likely to choose the older target than the younger one to carry out these tasks, regardless of their past memory behavior. A second, related study showed that subjects perceived older targets, more than their younger counterparts, to possess traits that are both desirable and relevant to performing memory tasks, such as responsible, trustworthy, and dependable. Erber et al. concluded that the negative effects of perceived forgetfulness in older adults may have been compensated for by their perceived possession of other valued, relevant traits.

Several researchers have also hypothesized that health-related target information would strongly influence attitudes toward aging as measured by the ASD. Milligan, Prescott, Powell, and Furchtgott (1989) had young, middle-aged, and older participants rate one of four male targets, all of whose personality and lifestyle descriptions were similar except for age (39 or 79 years) and health status (normal or involving serious chronic illnesses). Results indicated that subjects generally evaluated healthy targets more favorably than those in poor health. Moreover, older, but not younger, subjects tended to rate older profiles less positively than younger profiles, regardless of health status. Older participants expressed a particularly negative view of old-sick as compared to middle-aged and younger subjects, whereas the younger and middle-aged respondents showed the most negative attitude toward the young-sick. Similar findings

were reported by Gekowski and Knox (1990). It may be that health-related information is a more salient cue for evaluation of one's age peers than for non-age-peer groups.

There has been an increasing interest in the relative salience of age versus gender stereotypes for shaping perceptions, and in a potential double standard of aging for women and men. However, findings have varied according to design and measures used. For example, several studies reported no consistent evidence of target gender by age interaction effects on various evaluative measures (e.g., Lipka, 1987; Locke-Connor & Walsh, 1980; Walsh & Connor, 1979), whereas others found interaction effects on ratings of physical attractiveness (e.g., Canetto, Kaminski, & Felicio, 1995; Deutsch, Zalenski, & Clark, 1986).

Kite, Deaux, and Miele (1991) had students perform two tasks relative to a 35- or 65-year-old target man or woman. One was to generate free-response descriptions, and the other was to estimate the probability that the target possesses (experimenter-supplied) attributes associated with gender and old age stereotypes. Findings indicated significantly greater similarity among attributes associated with same-age targets than among those for same-sex targets. There were no overall differences in how older women and men were evaluated, but when respondents considered gender-linked characteristics, target gender was found to have a greater influence than target age. Thus, the relative influence of age and gender may depend, in part, on the attributes being assessed.

The use of different measures and methodology may account in part for contradictory findings by Canetto, Kaminski, and Felicio (1995). Canetto et al. varied

the target's level of functioning (typical or optimal), age (60 or 75 years), and gender (man, woman, unspecified) to examine gender- and age-related attitudes toward and stereotypes of young and older subjects. In contrast to the free-response format used in Kite's study, Canetto et al. employed generalized attitude measures (ASD, AOP). They found that same-gender targets were described more similarly than same-aged targets. Gender stereotypes of the elderly varied according to target gender, age, and level of functioning, as well as by respondent age.

There have been frequent attempts to identify reliable correlates of unfavorable attitudes toward or stereotypes of older adults. For the majority of respondent variables, the results have been mixed, with some studies reporting positive correlations, others negative correlations, and some finding no significant relationship. Several studies found a relationship between increasing positive attitudes toward the elderly and increased contact with them (e.g., Knox, Gekowski, & Johnson, 1986; Naus, 1973; Rosencranz & McNevin, 1969), but the correlations were generally weak, and other researchers found no effect of contact (e.g., Weinberger & Millham, 1975). Some investigations revealed a positive correlation between favorable views of older adults and perceiver age (e.g., Luszcz & Fitzgerald, 1986; Katz, 1990; Kite, Deaux, & Miele, 1991), while in others, older age was weakly associated with more negative views of the elderly (e.g., Hickey, Rakowksi, Hultsch, & Fatula, 1976). Mixed results have also been found for the effects of the perceiver's gender, such that in some instances, women indicated more favorable views of the elderly than men (e.g., Canetto, Kaminski, & Felicio, 1995; Deutsch, Zalenski, & Clark, 1986; Kite, Deaux, & Miele, 1991), while in

others no gender differences were found (e.g., Erber, Szuchman, & Etheart, 1993; Walsh & Connor, 1979). There is little evidence that socio-economic status or ethnic background are consistently related to evaluations of older adults.

In his 1980 review, Lutsky identified numerous personality variables that have been found to be unrelated, such as death anxiety, age identity, time perspective, body worries, attitudes toward mental illness, and perceived life expectancy. More recently, Katz (1990) reported that close to 30% of the variance in scores on the Aging Opinion Survey could be accounted for by personality and demographic factors, after controlling for social desirability responses, gender, and respondent age. Specifically, Katz found that individuals 19 to 80 years old who were relatively low in anxiety traits and relatively high in emotionally-sensitive traits and intellectual ability were more likely to express positive attitudes toward the elderly.

To summarize, early research focused on generalized attitudes toward the elderly as they compared to those held toward younger people. Overall findings indicated that although older adults are frequently evaluated negatively relative to younger persons, they are in an absolute sense viewed positively. Person perception studies have shown that age stereotyping is a complex phenomenon, which may depend in part on the specific attributes being assessed and their relevance to the evaluative context, as well as the kinds of other information provided. In some work contexts, older workers, as compared to their younger counterparts, may be viewed as less effective, less quick to adopt new ideas, less contributing, and having less potential. At the same time, older workers may be credited with more favorable ratings of stability, experience, and

individual initiative than younger ones. In some situational contexts, perceptions of valued traits in older adults may overshadow perceptions of lowered competence levels. There is some evidence to suggest that more favorable views of older people may be associated with increased contact with the elderly, gender, decreased levels of anxiety, and increased levels of emotional sensitivity and intellectual ability. In some instances, the influence of gender cues may exceed that of age cues on assessment of gender-linked and researcher-supplied characteristics, but may not bias free-response descriptions. Health-related information may influence evaluations of one's age peers, but may not strongly influence generalized attitudes toward aging.

Beliefs about old age and the elderly.

A common approach to examining beliefs about aging is to assess individuals' factual knowledge of aging or of older people as a specific social category. Knowledge measures typically consist of belief statements that are verifiable through objective evidence. To the extent that specific beliefs involve the attribution of negatively or positively evaluated attributes, they may, in some cases, also imply an evaluative predisposition toward the target. However, as Crockett and Hummert (1987) argued, because correlations between beliefs and the affective or evaluative aspects of general attitudes tend to be modest at best (e.g., Knox, Gekowski, & Johnson, 1986; Schonfield, 1982), the distinction between the two components seems worth maintaining. It is generally assumed that false beliefs indicate misinformation rather than aversion, and they have been likened to myths (Lutsky, 1980). This is not to suggest that assessing widely held but false beliefs about aging and old age may serve only anthropological

purposes. It is possible that objective belief structures may contribute to the perception and treatment of older adults in different ways from attitudinal evaluations.

Knowledge measures typically require an individual to indicate the objective truth value of various generalized claims regarding the physical, psychological, and social attributes of the elderly, which are readily verifiable through demographic or health surveys. One of the most widely used instruments to measure factual beliefs about old age and the elderly is Palmore's Facts on Aging Quiz-1 (FAQ1, Palmore 1977), which has since been updated and revised (Palmore, 1988). The FAQ1 consists of 25 true-false items pertaining to persons over 65 in the United States. It was designed to cover the basic physical, psychological, and social facts, and the most common misconceptions about old age (Palmore, 1977). The revised version allows for a don't know response category, in order to distinguish between misconceptions (i.e., falsely held beliefs indicated by incorrect responses) and ignorance (as indicated by don't know answers) (Palmore, 1988).

In his review of studies that have employed the FAQ1, Palmore (1988) reported that the mean proportion of correct responses ranges from 57% among those with high school education or less, to 94% among dental students and recreation services providers who had completed a geriatrics course. Thus, as education level increases, knowledge about aging tends to increase, particularly among those groups who have studied gerontology. Palmore attributed this effect to both increased general knowledge and increased test sophistication. Palmore concluded that, after educational levels are

controlled, knowledge scores on the FAQ1 do not essentially differ by gender, age, geographical position, race, occupation, or contact with the elderly.

Palmore (1988) identified people's most frequent misconceptions about the elderly as measured by the FAQ1. With regard to older adults (aged 65 years and older), individuals generally tend to overestimate: (a) the proportion of elderly persons in the population, (b) their feelings of boredom, (c) their inability to adapt to change, (d) religiosity at older ages, (e) the proportion of older persons who reside in long-stay institutions, and (f) the prevalence of poverty among the elderly. At the same time, most people correctly reject false statements about the elderly that pertain to a disinterest in sexual activity, a prevalence of senility, and an inability to learn new things (Lutsky, 1980). Frequent misconceptions of the elderly as measured by the FAQ2, an alternative version of the quiz, concern: (a) their rate of injuries suffered in the home, (b) racial differences in life expectancy, (c) Social Security benefits for the aged, (d) the relative income levels of older versus younger Americans, (e) the relative proportions of widows and widowers, (f) residential patterns of the elderly, and (g) their feelings about the empty nest (Palmore, 1988).

Geiger (1978) reported a similar range of false beliefs about aging in graduate students attending various professional schools (i.e., social work, law, and medicine). Participants responding to six open-ended and five true-false questions indicated common misconceptions regarding the proportion of elderly persons in the general population and in institutions. Subjects also generally underestimated the extent to which older adults experience chronic illness, and overestimated age-related declines in

the physical senses and intellectual abilities. At the same time, they were generally knowledgable about average life expectancy, working, and poverty among the aged.

Misconceptions about old age also seem apparent in how younger and middle-aged individuals rank-order the problems of the elderly, as compared to how the elderly themselves rank-order problems. In general, elderly participants (i.e., over 65 years in age) in the 1975 Harris survey ranked a fear of crime as their most pressing problem, followed by poor health concerns. In contrast, those under age 65 years indicated money and loneliness as the first and second most important problems of the aged, respectively (Geiger, 1978). Graduate students in Geiger's study ranked loneliness as the leading issue for older adults, followed by poor health.

Misperceptions were less evident in a study in which respondents rated problems of the elderly on a scale of seriousness rather than rank-ordering them. Seccombe and Ishii-Kuntz (1991) analysed data from the 1981 Harris survey, in which individuals from four age cohorts (between middle age and old-old age) were asked to rate the seriousness of eight problems of the aged. There were no age group differences in the problems rated as the first and second most serious, namely, fear of crime and not enough money, respectively. However, compared to all other age cohorts, the middle-aged cohort assigned the highest ratings of seriousness to the problems of the elderly, and the oldest-old cohort assigned the lowest ratings. From their review of the literature, Crockett and Hummert (1987) concluded that, in general, most people believe that health, sensory capacities, intelligence, sexuality, and physical attractiveness decline with increasing age, and that the elderly need assistance from others.

In summary, several researchers have investigated people's potentially verifiable beliefs about older people as a specific social group, as distinguished from inherently evaluative statements. General knowledge about old age has been shown to vary by educational level, but no consistent relationship has been found between factual beliefs and most other commonly measured demographic variables. On average, people overestimate the level of poverty, physical and cognitive decline, dependency, and social isolation of older adults.

Stereotypes of old age and the elderly.

Stereotypes of older adults comprise beliefs and expectations about the personal attributes, behaviors, and feelings of the elderly as a specific social category. In most earlier investigations, stereotypes were treated in conjunction with prejudice toward the elderly. Thus, the terms, stereotype and attitude, were often used interchangeably, on the apparent presupposition that the two variables are conceptually and positively related. More recently, it has been argued that a stereotype is not necessarily negative and should not be equated with prejudice. Braithwaite, Lynd-Stevenson, and Pigram (1993) proposed that the basic unit for defining a stereotype is descriptive (versus evaluative) belief. Although in many ways an old age stereotype is similar to factual beliefs about the elderly, most stereotype measures emphasize the attribution of personality traits, for most of which the validity cannot be determined (Crockett & Hummert, 1987). As well, most stereotype researchers continue to assess the evaluative nature of age stereotypes (e.g., Hummert, 1990, 1994; Hummert, Garstka, Shaner, & Strahm, 1995; Schmidt & Boland, 1986).

Numerous studies have examined stereotypes of old people in general, the typical older person, and specific (hypothetical) older adults of both sexes. Direct measures typically used include factual questionnaires, Likert-type scales, trait ratings, content analysis, sentence-completion tasks, semantic differential scales, and trait sorting. Indirect techniques involve role-playing and behavioral intentions. In most early studies, subjects were asked to simply indicate which of the characteristics provided by the researchers describe (or to what degree they describe) a generalized target. On the whole, these studies found stereotyped perceptions of the elderly to be neutral to positive in the absolute sense, and generally less positive than younger target groups in a comparative sense. Older adults are frequently assigned more negative traits than young or middle-aged adults, or rated more negatively on the same traits (Crockett & Hummert, 1986; Kite & Johnson, 1988).

Some theorists have viewed stereotypes as a function of categorization processes (e.g., Pettigrew, 1981). This approach assumes that individuals do not stereotype a person, they stereotype a person-as-a-member-of-a-group (Taylor, 1981). According to a model based on Rosch's theory of natural categories (as outlined by Brewer, Dull, & Lui, 1981), an entity's membership in one versus another related category is judged in terms of the entity's perceived similarity to the prototypical instance. A prototypical instance is that which comprises the attributes most representative of the category and least representative of those outside the category. Thus, a stereotype may be viewed as a prototypical instance of a social group to which individual members (exemplars) are compared. This perspective suggests that categorization is a function of the perceived

attributes of the target, the perceiver's categorization system, and the characteristics of the target made salient by the perceptual context. Brewer et al. (1981) used Rosch's theory to account for the finding that student subjects assigned to older adults numerous traits that can be viewed as inconsistent or contradictory (e.g., irritable and serene). That is, multiple stereotypes were taken to suggest meaningful subcategories of the elderly concept. They also found that respondents assigned higher frequencies of descriptive statements for instances they judged as good prototypes (i.e., more psychologically meaningful) than those judged as poor prototypes.

Schmidt and Boland (1986) also identified multiple coherent stereotypes of the elderly. Using a free-response format, undergraduates generated what were interpreted as 12 stereotypical categories of the typical older adult. The four positive categories were labeled as: (a) John Wayne Conservative, (b) Liberal Matriarch/Patriarch, (c) Perfect Grandparent, and (d) Sage. The eight negative types were labeled as: (a) Dependent, (b) Mildly Impaired, (c) Vulnerable, (d) Severely Impaired, (e) Shrew/Curmudgeon, (f) Recluse, (g) Nosy Neighbor, and (h) Bag Lady/Vagrant. They further found that attitudes, as measured on the ASD, differed significantly among these stereotypes: Attitudes toward each positive stereotype were significantly more positive than attitudes expressed toward each negative stereotype. Findings led Schmidt and Boland to suggest that the attitude expressed toward elderly persons may depend on the specific stereotype that is salient within the evaluative context.

Other research has shown that people also may use multiple categorizations for younger age groups. Hummert (1990) identified 13 stereotypes of young adults from a

trait-sorting task completed by undergraduates, in addition to 10 elderly stereotypes similar to those reported by Schmidt and Boland (1986). Hummert also found that, although attitudes varied as a function of the stereotype activated, there was no negative bias toward the elderly in attitudes toward analogous categories. However, negative stereotypes were considered more typical of the very old than positive ones, whereas positive categorizations were viewed as more typical of young adults than negative ones. In a related study, Hummert (1993) concluded that older and younger people may differ in their conceptions of when old age begins, and thus may associate different age ranges for the same stereotypes.

In Hummert, Garstka, Shaner, and Strahm (1995), young, middle-aged, and elderly subjects rated their attitudes toward, the typicality of, and the age range associated with, 6 negative and 5 positive stereotypes of the elderly. All participants, but particularly the young adults, more frequently assigned young-old ages to the positive stereotypes than to the negative ones, and very-old age ranges to the negative stereotypes than to the positive ones. Unexpectedly, elderly respondents assigned lower overall typicality ratings to the set of stereotypes (both positive and negative) than subjects in the other two age groups. The authors speculated that more complex aging schemas held by older adults may lead them to consider any one stereotypical profile as less representative of the elderly than do younger age groups.

Several studies have investigated whether the presentation of information inconsistent with negative stereotypes may increase the likelihood that respondents will attribute the target individual's action to positive, internal characteristics, rather than to

an external source such as age. Overall, these studies have found no clear or consistent target age by information interaction effects (e.g., Crockett, Press, & Osterkamp, 1979; Lawrence, 1974; Stier & Kline, 1980). Likewise, Braithwaite (1986) obtained no support for the hypothesis that negative old age stereotypes would be evoked only when the stimulus individual demonstrates socially unattractive behaviors, such as poor physical or mental health.

In summary, generalized stereotypes of older age groups or older individuals are generally found to be neutral to positive overall, but less positive than those typically assigned to younger adults. At the same time, there is considerable evidence that multi-level conceptions of the elderly exist, which are both positive and negative in nature, and which evoke corresponding attitudinal evaluations. Adults of all ages, but particularly younger ones, tend to associate more negative stereotypes with older age ranges than positive ones, and more positive conceptions with younger ages than negative ones. However, older adults may be less likely to view any stereotype as typical of the elderly than do their younger counterparts. Age-related differences in conceptions of the onset of old age may contribute in part to perceiver age differences in stereotypes associated with older age groups. On the whole, there is no clear support for the notion that target information that is inconsistent with negative old age stereotypes may influence the behavioral attributions people make about older individuals.

Implicit theories of aging.

Implicit theories of aging have been defined as, "schemalike knowledge structures that include specific beliefs regarding the inherent stability of an attribute, as

well as a set of general principles concerning the conditions likely to promote personal change or stability" (Ross, 1989, p. 342). Thus, implicit theories embody multidimensional and logically organized developmental beliefs about the nature and modifiability of aging-related change. These structures are considered implicit because they comprise rarely articulated but strongly held beliefs.

Ross (1989) suggested that implicit theories of stability and change originate in social-cultural conceptions of the aging process, which are revealed in the perceived differences between old and young adults. That is, the view that older adults differ from their younger counterparts on some attributes but not others implies the existence of beliefs that some characteristics are seen as changing across the life course, whereas others are seen as stable.

Normative conceptions of aging may or may not accurately reflect objective developmental change, but they are assumed to have potentially important psychological consequences for the individual. Some of these include: assisting adjustment to age-related declines and perceiving coherence across one's life (McFarland, Ross, & Giltrow, 1992); shaping goal-oriented behavior (Dweck & Leggett, 1988); and maintaining adequate levels of self-respect and identity (Heckhausen & Baltes, 1991). Ross (1989) suggested that an implicit theory may help organize perceptions of past and present functioning into a coherent arrangement of information that is consistent with the theory. There is some support for this view (e.g., McFarland, Ross, & Giltrow, 1992).

This approach to assessing subjective perceptions of aging seems to reflect the influence of several current research trends. For example, the phenomenological tradition emphasizes individuals' attempts to organize their life experiences into meaningful and logically organized forms (e.g., Markus & Nurius, 1986; Whitbourne, 1985). The life-span approach focuses on a lifelong process of multidirectional and multidimensional change. According to this model, aging-related development involves an ever-shifting balance between gains and losses, which differ in terms of timing (onset, duration, termination) and plasticity (i.e., intraindividual modifiability) (Baltes, 1987). The social cognitive perspective targets the role of beliefs or expectations in guiding behavior and action (e.g., Bandura, 1989; Dweck & Leggett, 1988). Each of these approaches assume that developmental beliefs play a prominent role in people's evaluation of their past, expectations about their future development (Markus & Nurius, 1986), and their behavior (Baltes & Baltes, 1990; Heckhausen, Hundertmark, & Krüger, 1992).

One early study of people's developmental beliefs involved the attribution of personality traits to various age groups across the life course. Aaronson (1966) had subjects rate the typical person on an adjective checklist for age decade intervals from 5 to 85 years. Nonparametric methods were used to identify three separate factors according to the frequencies by which adjectives were checked by age. The three factors corresponded to periods of childhood, adulthood, and senescence. These findings suggested that people may associate specific sets of attributes with major developmental portions of the life course.

A study by Rubin and Brown (1975) was another early attempt to examine normative conceptions of developmental change across the entire life course. Undergraduates rated target individuals, whose ages represented infancy to old age, on their ability to perform specific cognitive tasks (e.g., categorization and conservation tasks, and puzzles), as well as their generalized ability to live alone and care for themselves. On average, respondents indicated that intellectual ability and the ability to care for oneself increases with age until old age, at which time declines in both were thought to occur.

In later studies, subjects were typically asked to assess changes they believe occur in generalized others across the adult life course. Fitzgerald and Hyland (1980) asked students to draw a graph of developmental change in several areas of competence across the life course. Most participants depicted an increase of intellectual and problem-solving abilities from college age to middle age, followed by a sharp decrease in old age. At the same time, they indicated a significant increase in moral reasoning from middle age through to old age.

Williams, Denney, and Schadler (1983) reported that most older individuals (i.e., aged 65 - 75 years) believe that memory declines with increasing age during the adult years but problem-solving abilities improve with increasing age. When asked what type of problems people become better able to solve as they grow older, most respondents described some form of what Williams et al. considered <u>everyday</u> problems (e.g., financial problems), as opposed to the kind of problems that are typically posed in research settings. There was a high level of agreement in respon

changes in memory and everyday problem-solving abilities can be influenced (e.g., enhanced or diminished as a function of activity level or experience).

Other studies have also examined subjective beliefs regarding the inevitability of aging-related change. Across two related studies, Heckhausen and her colleagues (1989, 1991) looked at three facets of developmental conceptions: (a) subjective beliefs about which aspects of personality, social, and intellectual functioning are sensitive to change across adulthood; (b) the degree of perceived desirability of change-sensitive characteristics; and (c) conceptions about the age-related timing (onset and closing age) of expected changes. Heckhausen, Dixon, and Baltes (1989) asked young, middle-aged, and older individuals to rate the degree of expected increase in numerous personality traits across the life course of people in general. Respondents also indicated the age decades at which such changes might be expected to begin and end. Overall, there was considerable similarity in change beliefs within and across the four age groups. Developmental expectations were interpreted by the authors as being generally optimistic because they involved more desirable increases (gains) than those considered undesirable (losses), and because some increases were predicted to occur throughout old age (e.g., in wisdom and dignity). However, the vast majority of the predicted gains were associated with the early adult ages (i.e., 20 - 40 years), whereas most of the developmental losses were thought to occur at much older ages (i.e., over 40 years). Younger adults indicated more uniform beliefs about the timing of change (i.e., onset and closing) than older individuals, who in turn endorsed a greater range of personal

attributes as change-sensitive than their younger counterparts. These findings were taken to suggest greater complexity in the developmental beliefs of older adults. In a subsequent investigation, Heckhausen and Baltes (1991) found that changes expected to occur later in adulthood were perceived as less desirable than those thought to occur at earlier ages, and that less desirable changes were considered to be less controllable (through internal or external means).

Heckhausen and Krueger (1993) had young, middle-aged, and older subjects rate expected change (increase, stability, decrease) in trait attributes for self and most other people. Separate ratings were assigned for each of seven age decades of the adult life span (20s to 90s). Developmental trajectories were generally characterized by perceived increases in desirable characteristics and decreases in undesirable attributes throughout young adulthood (age decades of the 20s and 30s), followed by declines in desirable attributes and increases in undesirable characteristics across the latter part of the life course.

Most of the respondents in two studies by Ross (1987, unpublished, cited in Ross, 1989; Ross, 1989) also depicted life-course trajectories as curvilinear, with a predominance of early increases (gains) and late decreases (losses). Student subjects drew graphs incorporating changes they expect to occur in personality traits, personal abilities (e.g., ability to fix things, creativity, musicality), and opinions, for three target individuals (i.e., self, best friend, the average student) as they aged from 5 to 85 years. The graphs were classified according to their judged similarity to prototype plots, which included a horizontal line (stability), a U-shaped line, an inverted-U, and an early rise

followed by stability. Most plots for items representing abilities were judged to resemble an inverted U-shaped curve, whereas most plots for opinions indicated lifespan stability. There were no significant differences in prototype plot categorization for the three target individuals or by respondent gender.

To summarize, there is considerable evidence that individuals share highly similar beliefs about normative development across the adult life course. Most people tend to view change across the adult life course as a gradual shift from developmental growth during early and middle adulthood to incremental declines at advanced ages. When graphically depicted, this trajectory most often resembles an inverted U-shaped curve. Attributes that are thought to change in this manner include specific cognitive and personal abilities, the generalized ability to care for oneself, everyday problem solving, and various personality traits. Personal opinions are generally believed to remain stable across adulthood, and gains in wisdom and dignity are thought to occur throughout most of the adult life course. Developmental changes that are generally considered amenable to influence pertain to memory, everyday problem-solving abilities, desirable (as opposed to undesirable) changes in personality, and early-onset personality changes. There is also some support for the notion that implicit theories of aging consist of logically related belief components. Several studies have found a relationship between the perceived desirability and timing of developmental change.

The Present Research Question

Normative conceptions of adult development have been referred to as widely shared common-sense knowledge from which individual predictions are formed (Heckhausen & Krueger, 1993). According to this view, implicit theories provide a normative framework by which to forecast future change in others, and to evaluate which kinds of changes are typical and how modifiable change may be. At the same time, person perception research has clearly demonstrated that assessments of individuals may vary from group evaluations as a function of perceived characteristics that are considered relevant to the evaluative context. Stereotype research has also determined that people hold multiple conceptions of generalized others, which may be variously evoked.

By extension, it seems reasonable that subjective beliefs about aging with respect to specific individuals might also vary from normative conceptions. Most studies of implicit theories to date have targeted notions of change in generalized others or self. What is missing in the literature (an exception being Ross, 1989) is the examination of the link between beliefs about aging in general and our expectations of aging for others personally known to us. I wondered how individuals view aging within a social context, as it pertains to those whose aging is likely be a highly salient issue for most people at some point in their lives: their parents. In other words, I was interested in how people integrate normative conceptions of aging with the myriad of personal and potentially relevant information most have about their parents. How might a generic blueprint of aging be reflected in adult children's predictions of developmental change for their

mothers or fathers? I thought that the most ecologically valid means by which to investigate this general question might be to ask them how they expect their parents to change in aspects of everyday functioning, as opposed to the more popular practice of examining perceived change in personality traits.

To this end, the present research was aimed at comparing people's implicit theories of aging as they pertain to the everyday functioning of generalized adult targets versus their parents. In the first of two separate studies, a multiple target measure was developed and administered to examine individuals' developmental beliefs and expectations for either their mother, their father, the average man or average woman. The Implicit Theories of Aging Questionnaire (ITAQ) targeted three aspects of developmental beliefs: (a) the direction and degree of expected change, (b) the perceived timing of expected change, and (c) the degree of perceived influence one may have over expected change. Thus, the first investigation was exploratory in nature and was not guided by specific hypotheses.

The second study was undertaken primarily to replicate the findings of the first. An additional objective was to extend the first study by investigating the potential relationship between people's implicit theories of aging and their factual knowledge about the elderly as assessed by the FAQ1. It was thought that the addition of this measure would facilitate interpretation of interindividual variability in scores on the ITAQ. On the assumption that implicit notions of aging are reflected in normative conceptions of older adults (Ross, 1989), it seemed reasonable to predict an association between a measure of knowledge, in which individuals indicate what they believe <u>is</u> true

of most older adults, and a measure of implicit theories of aging, in which they indicate what they believe will happen to most people as they grow old. Specifically, it was hypothesized that individuals who accept (as true) more false belief items on the FAQ1 would also tend to exaggerate the degree of aging-related decline in everyday functioning, as compared to those who endorse fewer false beliefs. Findings from the first study led me to further predict that individuals' scores on the FAQ1 would be more strongly correlated with expectations of aging-related change for one's mother or father, than for the generalized man or woman. Support for these hypotheses would suggest that both the FAQ1 and the generalized adult forms of my questionnaire measure beliefs about normative aging, compared to which individuals' expectations about their parents' aging are positively biased.

Study 1

Method

Participants.

Two hundred and six adults participated Study 1 (age range: 17-55 years; M age = 22 years; 65 men and 141 women). Participants volunteered through the University of Victoria's Psychology Department Subject Pool. Table 1 provides a demographic summary of the sample. Although the vast majority of respondents reported English as the first language of themselves and their parents (self, 89%; fathers, 73%; mothers, 74%), the sample nevertheless represented a wide range of language groups. Twelve different languages were indicated for participants, and an average of 22 languages were attributed to parents. However, there were not enough respondents in specific

Table 1

Demographic Characteristics of Subject Sample: Study 1

Variable	M	SD	n
Age	21.78	6.32	206
Education (in years)	13.48	1.62	206
Number of children	.10	.43	206
Health compared to perfect state (1 = very good; 5 = very poor)	1.59	.62	206
Health compared to age cohort (1 = very good; 5 = very poor)	1.66	.62	206
Number of siblings	1.87	1.35	205
Father's age	51.89	7.38	197
Mother's age	49.36	7.33	205
Father's education (in years)	14.04	3.69	205
Mother's education (in years)	13.74	3.40	204
Father's health / perfect state (1 = very good; 5 = very poor)	2.25	.93	198
Father's health / age cohort (1 = very good; 5 = very poor)	1.98	.90	198
Father's health, interference with functioning (1 = not at all; 4 = quite a lot)	2.27	.87	52
Mother's health / perfect state (1 = very good; 5 = very poor)	2.17	.83	204
Mother's health / age cohort (1 = very good; 5 = very poor)	2.05	.81	203
Mother's health, interference with functioning (1 = not at all; 4 = quite a lot)	2.12	.82	50
Relationship closeness, father (1 = very close; 4 = not close at all)	1.96	.88	198
Relationship closeness, mother (1 = very close; 4 = not close at all)	1.66	.71	204
Mother's age identity (1 = young; 4 = old)	2.06	.71	100
Age, mother looks	43.30	2.15	100
Age, mother does	43.00	13.45	100
Age, mother's interest	42.90	12.09	103
Father's age identity (1 = young; 4 = old)	2.10	.59	100
Age, father does	41.30	12.61	100
Age, father's interests	41.90	12.45	100
Age, father looks	45.00	10.00	100

(table continues)

Variable		
	n	Percentage
First language, self		
English	183	89
Non-English	23	11
First language, mother		
English	152	74
Non-English	54	26
First language, father		
English	150	73
Non-English	65	27

non-English language groups to allow analysis of separate language groups. Participants were classified as either English as first language or non-English as first language for correlational analysis.

Most respondents reported being of single marital status and in good overall health, and as having one or two siblings and a close relationship with both parents, with whom they reside or from whom they live less than 500 miles. On average, individuals described their parents as being about 50 years of age, well-educated, and of an upper-level occupational status (i.e., either sales/management or professional).

Materials and procedures.

Before participating, individuals were provided with a written description of the study and its intended purpose (see Appendix A). Informed consent was then obtained (see Appendix B). Participants provided basic demographic information about themselves and their family, and rated the closeness of their relationship with their parents (see

Appendix C). They were also asked to rate several aspects of perceived age identity for one of their parents (see Appendix D). Respondents who received either the Mother or Average Woman questionnaire forms rated the perceived age identity of their mothers, and those who received either the Father or Average Man forms rated the age identities of their fathers.

Four target forms of the ITAQ (essentially the same as shown in Appendix E) were randomly distributed among participants: (a) 16 men and 35 women completed Form 1 (Mother), (b) 13 men and 38 women completed Form 2 (Father), (c) 19 men and 34 women completed Form 3 (Average Woman), and (d) 17 men and 34 women completed Form 4 (Average Man). Individuals were instructed to request an alternative form if the one initially assigned to them pertained to a deceased parent. Three of the 12 participants who reported at least one deceased parent requested an alternative form. One participant chose not to complete the questionnaire, having stated a reluctance to provide unqualified predictions of change for any target individual.

Participants responded to three questions pertaining to each of 76 items, which describe various physical, cognitive, and psychosocial attributes or abilities. Responses to all three questions were selected from 5-point Likert-type scales, and were indicated on accompanying response sheets as shown in Appendix F.

Specific items were selected or adapted from a variety of sources in the literature (Hummert, 1990; Lawton & Brody, 1969; McFarland, Ross, & Giltrow, 1992; National Council on the Aging, 1975; Palmore, 1977; Tuckman & Lorge, 1953), with an emphasis on attributes or abilities that may be considered reflective of, or relevant to,

an adult's everyday functioning. Because the focus of this research was on relative judgments of aging-related change according to target individual, it was not considered necessary to include equal proportions of items commonly rated as declining with increasing age versus those which might be more likely to be associated with developmental stability or growth.

The questionnaire design was based on approaches used in previous studies (e.g., Heckhausen, Dixon, & Baltes, 1989; McFarland, Ross, & Giltrow, 1992). The first question asked individuals to rate the degree to which they think the target individual will show an aging-related decrease, increase, or no change in each of the 76 items (-3 = extreme decrease, 0 = no change, +3 = extreme increase), from middle age (i.e., starting at age 40 years) through very old age (i.e., past age 80 years). The second question required them to indicate the age decade at which they think the target will begin to experience such change in a specific attribute or ability (40s - 80+). In the third question, respondents were asked to rate the degree to which they think the target individual could influence (i.e., facilitate or hinder) change in these items (0 = not at all, 2 = moderate, 4 = very much).

Participants were then asked to indicate the age category (e.g., young, middle-aged, old) to which they perceive one parent (of the same gender as the form target) to belong, and to indicate the age decade that they think best describes the parent in terms of his or her appearance, activities, and interests (adapted from Barak, 1987). Following their participation, individuals were provided with a rationale for the study essentially

the same as shown in Appendix G. Participants were also given the opportunity to receive a summary of the results.

Results

Examination of the data and item reduction.

Data were examined and analysed using SPSS-PC Version 6. SPSS-PC EXPLORE was used to identify cases with extreme values in the boxplot for each form (i.e., those values that are more than 3 box-lengths from the upper or lower edge of the box). Extreme values of mean ratings of change across items, estimated age of change onset, and perceived influence over change were modified to values .01 more or less than the next highest or lowest score in the distribution. An alpha level of .05 was used for all statistical tests unless otherwise stated.

Employing a procedure similar to that of McFarland, Ross, and Giltrow (1992), items were labeled as theory of change (loss or gain) if the mean change score differed significantly from 0 (the value on the rating scale labeled as no change). Items whose mean change score did not differ significantly from 0 were classified as theory of stability. Therefore, seven items that showed a bimodal distribution were discarded (i.e., roughly equal and substantial proportions of negative and positive change scores). This procedure avoids the possibility that an item would be erroneously classified as a theory of stability item because positive and negative scores canceled each other out.

Several other items were eliminated because they were judged to be: (a) redundant, as indicated by a significant correlation with another, conceptually similar item (e.g., participation in hobbies or recreational activities and tendency to seek out or

initiate recreational and social activities; (b) overly evaluative or negative in connotation (e.g., self-pity, tendency to worry about unimportant things, use of common sense); (c) poorly worded (e.g., interest in community and world events); or (d) ambiguous in meaning (e.g., having enough money to live on, tendency to day-dream). In all, 24 items were eliminated, reducing the item list used in subsequent analyses to 52 items (see Appendix F).

Reverse-scoring.

Sixteen items were written such that a predicted decrease would logically imply a developmental gain (e.g., susceptibility to minor illnesses), whereas a decrease in the remaining items would imply a developmental loss or decline (e.g., reaction time). These 16 items also showed negative correlations with the sum of the scores on the remaining items. To maintain conceptual consistency and to ease interpretation of change ratings, these items were reverse-scored. After reverse-scoring, negative scores were interpreted as developmental losses, and positive scores were viewed as developmental gains. Means and standard deviations for each item obtained for each target form (after reverse-scoring) are displayed in Table 2.

Scale reliability and inter-target consensus.

Reliability estimates for each target form as measured by Cronbach's alpha were as follows: Mother, $\alpha = .84$; Father, $\alpha = .91$; Average Woman, $\alpha = .85$; Average Man, $\alpha = .86$. To assess the degree of inter-form consensus, Spearman rank correlations were computed across the mean ratings of change for each of the 52 items, within each form, as follows: Mother, Father, $r = .86$, $p = .000$; Mother, Woman, $r = .90$, $p = .000$;

Table 2

Mean Ratings of Change by Target Form: Study 1

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Mother target (n = 51)						
Family contact	$.67_{g}$	1.37	58.89	10.90	2.36	1.25
Hobbies/recreation	$.24_{s}$	1.67				
Tolerance of new ideas	$-.06_{s}$	1.32				
Ability to communicate needs	$-.08_{s}$	1.13				
Belief in competence	$-.12_{s}$	1.11				
Self-esteem	$-.20_{s}$	.98				
Tendency to be angry/upset *	$-.29_{s}$	1.03				
Personal hygiene	$-.29_{s}$	.88				
Good judgment	$-.31_{l}$	.76	69.47	11.77	1.47	1.22
Tendency to dwell on past *	$-.33_{s}$	1.34				
Proneness to minor accidents *	$-.37_{s}$	1.28				
Psychological well-being	$-.37_{s}$	1.06				
Sleeplessness *	$-.37_{s}$	1.26				
Speech ability	$-.39_{l-1}$	.60	77.06	5.88	.59	.71
Follow medical instructions	$-.41_{l}$	.80	71.90	9.28	1.48	1.08
Deal effectively with others	$-.45_{l}$	1.22	64.19	12.05	1.77	1.12
Ability to use public transit	$-.45_{l}$	1.29	68.48	11.21	1.52	1.06
Ability to learn new things	$-.47_{l-1}$	1.08	63.82	11.55	1.56	1.13
Physical exercise	$-.53_{l}$	1.43	57.75	13.10	2.55	1.26
Fatigue *	$-.61_{l-1}$	1.70	60.00	11.18	1.33	1.11
Ability to handle finances	$-.63_{l-1}$	.94	72.12	11.39	1.24	.94
Susceptibility to depression *	$-.69_{l-1}$	1.21	62.25	13.30	1.92	1.00
Tendency to repeat self *	$-.69_{l-1}$	1.07	65.71	12.33	1.29	1.07
Loneliness *	$-.71_{l-1}$	1.40	67.75	12.50	1.83	1.08
Anxiety about future *	$-.73_{l-1}$	1.17	61.35	12.28	2.06	.89
Adaptability	$-.76_{l-1}$	1.09	64.75	11.54	1.67	.92
Remember long past events	$-.78_{l-1}$	.90	68.06	10.46	.81	.83

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Ability to prepare meals	$-.80_{t-1}$	.92	75.00	7.97	.84	.92
Problem-solving ability	$-.80_{t-1}$	1.02	68.38	10.14	1.00	.97
Boredom *	$-.86_{t-1}$	1.00	64.32	12.37	2.16	.96
Ability to concentrate	$-.86_{t-1}$	.87	67.67	10.65	1.05	.85
Physical dependence *	$-.94_{t-1}$	1.33	72.22	9.51	1.33	1.13
Emotional dependence *	$-.94_{t-1}$	1.38	62.68	12.05	2.05	1.01
Remember names, numbers	$-.98_{t-1}$	.86	66.83	12.34	1.02	.86
Ability to do necessary tasks	-1.06_{t-1}	.88	70.98	8.60	1.07	.79
Mental alertness	-1.06_{t-1}	.87	68.67	11.20	1.04	.88
Physical coordination	-1.08_{t-1}	.84	70.44	9.76	.89	.98
Housekeeping	-1.12_{t-1}	.82	71.19	9.16	1.12	.89
Fear of being alone *	-1.12_{t-1}	1.19	66.67	11.99	1.97	1.06
Hearing	-1.14_{t-1}	1.02	70.00	10.12	.67	1.20
Worry physical problems *	-1.14_{t-1}	1.11	57.38	12.70	2.24	1.01
General health	-1.20_{t-1}	.85	66.25	11.23	1.60	1.07
Remember everyday tasks	-1.22_{t-1}	.67	67.66	11.27	1.17	.94
Minor illnesses *	-1.22_{t-1}	1.05	65.33	11.00	1.20	1.12
Minor aches and pains *	-1.29_{t-1}	1.35	62.40	11.17	1.36	1.16
Visual ability	-1.29_{t-1}	.90	63.19	12.53	.60	.80
Recovery from illnesses	-1.29_{t-1}	.58	62.29	10.57	1.13	1.02
Driving competence	-1.31_{t-1}	1.06	69.02	10.44	1.00	1.05
Ability to work	-1.31_{t-1}	.99	67.44	9.93	1.33	1.15
Home maintenance	-1.35_{t-1}	.91	69.29	9.97	1.31	.84
Reaction time	-1.53_{t-1}	.86	65.71	10.99	.88	.99
Physical strength	-1.75_{t-1}	.84	66.88	10.55	1.31	1.21
Mother target: Overall Average	-0.75	1.06	66.75	10.93	1.36	1.00

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Father target (n = 51)						
Hobbies/recreation	$.80_g$	1.55	57.07	10.78	2.46	1.16
Family contact	$.48_s$	1.37				
Belief in competence	$.04_s$	1.09				
Tendency to be angry/upset *	$.00_s$	1.30				
Good judgment	$-.04_s$	1.13				
Follow medical instructions	$-.10_s$	.96				
Sleeplessness *	$-.16_s$	1.35				
Self-esteem	$-.18_s$	1.13				
Deal effectively with others	$-.18_s$	1.05				
Speech ability	$-.27_{l-i}$	.75	70.00	11.18	1.35	1.17
Physical exercise	$-.29_s$	1.66				
Personal hygiene	$-.31_l$	.68	65.00	14.54	2.00	1.11
Psychological well-being	$-.35_s$	1.00				
Ability to handle finances	$-.43_{l-i}$	.96	67.14	12.43	1.41	1.01
Ability to use public transit	$-.43_l$	.85	74.74	7.72	1.45	1.28
Ability to prepare meals	$-.45_{l-i}$	1.10	66.67	12.42	1.42	1.02
Anxiety about future *	$-.47_{l-i}$	1.30	59.43	11.36	1.97	.92
Ability to communicate needs	$-.47_l$	1.01	65.48	12.61	1.67	.96
Remember long past events	$-.53_{l-i}$	1.12	66.67	9.57	1.19	1.05
Tendency to dwell on past *	$-.53_l$	1.21	56.21	11.15	2.10	1.14
Boredom *	$-.55_{l-i}$	1.14	62.42	12.26	2.28	.89
Physical dependence *	$-.61_{l-i}$	1.25	71.43	8.14	1.39	.95
Adaptability	$-.61_{l-i}$	.98	61.86	10.06	1.90	.93
Tolerance of new ideas	$-.61_l$	1.30	57.03	12.88	2.32	1.06
Ability to learn new things	$-.63_{l-i}$	1.17	63.33	12.03	1.55	.83
Proneness to minor accidents *	$-.65_l$	.87	67.37	8.91	1.11	.84
Ability to concentrate	$-.65_{l-i}$	1.13	66.86	12.31	1.29	1.12
Ability to do necessary tasks	$-.68_{l-i}$	.91	71.79	9.97	1.38	1.04
Housekeeping	$-.69_{l-i}$	.95	68.38	10.41	1.43	.93

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Tendency to repeat self *	$-.73_{1-1}$	.90	65.16	16.24	1.06	1.05
Susceptibility to depression *	$-.73_{1-1}$	1.10	57.58	10.91	1.91	.91
Emotional dependence *	$-.78_{1-1}$	1.22	61.62	12.14	1.92	1.02
Loneliness *	$-.78_{1-1}$	1.01	65.71	11.95	1.88	.84
Problem-solving ability	$-.80_{1-1}$	1.02	65.00	10.59	1.46	.77
Minor illnesses *	$-.82_{1-1}$	1.01	64.55	9.75	1.16	.96
Fatigue *	$-.86_{1-1}$	1.66	61.88	10.65	1.56	1.07
Ability to work	$-.86_{1-1}$	1.02	66.18	9.54	1.15	.94
Home maintenance	$-.86_{1-1}$	.89	66.43	11.65	1.33	.89
Fear of being alone *	$-.88_{1-1}$	1.16	63.43	11.62	1.77	1.09
Mental alertness	$-.90_{1-1}$	1.10	67.07	10.78	1.37	1.11
Recovery from illnesses	-1.02_{1-1}	.97	61.67	10.34	1.33	.95
Physical coordination	-1.08_{1-1}	.63	68.48	8.94	1.07	.94
General health	-1.08_{1-1}	.93	64.22	9.65	1.39	.99
Driving competence	-1.10_{1-1}	.94	69.71	8.57	1.11	.93
Worry physical problems *	-1.12_{1-1}	.89	57.56	9.33	1.76	.96
Remember everyday tasks	-1.12_{1-1}	.82	67.62	11.22	1.17	1.06
Reaction time	-1.16_{1-1}	1.29	64.89	8.43	1.13	1.20
Remember names, numbers	-1.20_{1-1}	.83	67.07	11.01	1.10	.93
Visual ability	-1.22_{1-1}	.78	62.44	12.28	.80	.95
Hearing	-1.37_{1-1}	1.08	65.33	9.91	.84	1.12
Physical strength	-1.39_{1-1}	.92	64.08	9.77	1.38	1.27
Minor aches and pains *	-1.69_{1-1}	.95	62.55	10.36	1.26	1.03
Father target: Overall Average	-0.64	.46	64.13	10.88	1.58	1.02

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Average Woman target (n = 53)						
Family contact	$.55_g$	1.51	60.50	10.61	2.72	1.11
Hobbies/recreation	$.36_s$	1.56				
Tendency to be angry/upset *	$-.15_s$	1.12				
Sleeplessness *	$-.36_s$	1.36				
Good judgment	$-.45_l$	.87	68.18	11.85	1.61	.97
Self-esteem	$-.46_l$	.90	59.12	10.83	2.35	1.04
Ability to communicate needs	$-.57_l$	.93	70.00	9.35	2.03	1.13
Speech ability	$-.57_{l-1}$	.80	73.70	9.67	1.11	.97
Belief in competence	$-.60_l$	1.03	67.78	9.89	1.89	.98
Fatigue *	$-.62_{l-1}$	1.77	60.80	10.07	1.48	1.13
Follow medical instructions	$-.62_l$	1.15	70.48	11.88	1.86	1.00
Personal hygiene	$-.63_l$	1.05	69.70	11.04	2.39	1.22
Remember long past events	$-.68_{l-1}$	1.09	67.00	10.91	1.50	1.09
Tendency to dwell on past *	$-.74_l$	1.09	55.33	10.36	2.36	1.07
Proneness to minor accidents *	$-.74_l$	1.43	69.41	8.58	1.10	1.02
Anxiety about future *	$-.77_{l-1}$	1.39	58.67	12.36	2.18	1.09
Psychological well-being	$-.77_l$	.91	68.11	12.21	1.59	1.19
Tolerance of new ideas	$-.77_l$	1.32	60.47	8.44	2.09	1.02
Ability to use public transit	$-.77_l$	1.30	70.75	8.88	1.40	1.10
Ability to handle finances	$-.83_{l-1}$	.83	71.35	7.87	1.59	.90
Deal effectively with others	$-.85_l$	1.17	62.67	11.36	1.84	1.09
Ability to learn new things	$-.87_{l-1}$	1.13	62.25	11.43	1.67	1.27
Susceptibility to depression *	$-.98_{l-1}$	.87	60.89	12.03	1.98	.97
Boredom *	-1.04_{l-1}	1.02	65.58	8.54	2.56	1.01
Physical dependence *	-1.06_{l-1}	1.46	72.88	7.23	1.29	1.07
Ability to do necessary tasks	-1.06_{l-1}	.79	71.70	8.16	1.36	.73
Problem-solving ability	-1.06_{l-1}	.91	67.96	10.20	1.33	1.05
Ability to prepare meals	-1.06_{l-1}	.86	76.34	4.88	1.17	.89
Ability to concentrate	-1.08_{l-1}	1.19	68.18	9.47	1.23	1.05

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Home maintenance	-1.11_{1-1}	.85	67.35	8.11	1.43	.79
Tendency to repeat self *	-1.11_{1-1}	.72	67.33	9.15	1.36	.91
Remember everyday tasks	-1.15_{1-1}	.89	71.70	8.16	1.31	.92
Hearing	-1.21_{1-1}	1.17	64.90	8.69	.55	.91
Loneliness *	-1.21_{1-1}	1.29	69.18	8.38	1.78	.98
Remember names, numbers	-1.21_{1-1}	.69	67.39	8.80	1.20	.81
Minor illnesses *	-1.25_{1-1}	1.24	65.29	9.02	1.10	1.02
Mental alertness	-1.28_{1-1}	.93	68.63	9.39	1.18	.97
Ability to work	-1.30_{1-1}	.87	65.10	8.47	1.52	.87
Physical exercise	-1.34_{1}	1.34	57.40	11.21	2.56	1.18
Worry physical problems *	-1.38_{1-1}	.90	61.46	10.10	2.13	.96
Emotional dependence *	-1.40_{1-1}	.97	66.22	9.60	1.76	.86
Adaptability	-1.40_{1-1}	.82	63.00	9.95	1.82	.98
Housekeeping	-1.42_{1-1}	.69	71.60	7.10	1.28	1.05
Minor aches and pains *	-1.42_{1-1}	1.17	60.38	9.49	1.31	1.00
General health	-1.43_{1-1}	.82	67.31	8.88	1.60	1.07
Physical coordination	-1.47_{1-1}	.75	69.04	10.34	1.04	.95
Recovery from illnesses	-1.53_{1-1}	1.12	65.69	9.00	1.29	1.12
Visual ability	-1.62_{1-1}	.90	62.50	11.53	.54	.83
Fear of being alone *	-1.66_{1-1}	1.18	66.15	8.89	1.96	1.10
Reaction time	-1.68_{1-1}	1.03	63.96	9.87	.89	1.03
Driving competence	-1.74_{1-1}	1.06	67.80	6.16	1.42	1.16
Physical strength	-1.94_{1-1}	.63	63.77	9.65	1.62	1.10
Average Woman target: Overall Average	-0.99	.36	65.89	9.60	1.62	1.01

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Average Man target (n = 51)						
Hobbies/recreation	$.59_g$	1.37	58.41	6.80	2.68	.96
Family contact	$.55_g$	1.42	63.42	8.15	2.68	.96
Belief in competence	$-.33_s$	1.18				
Ability to use public transit	$-.41_s$	1.22				
Ability to communicate needs	$-.41_l$	1.04	65.29	10.51	1.79	1.17
Anxiety about future *	$-.47_s$	1.51				
Tendency to be angry/upset *	$-.55_l$	1.19	61.89	11.51	2.16	1.07
Self-esteem	$-.59_l$	1.02	59.19	10.10	2.36	1.02
Remember long past events	$-.59_{l-l}$	1.44	64.77	10.23	1.41	1.11
Tendency to dwell on past *	$-.61_l$	1.25	56.90	10.00	2.38	1.01
Follow medical instructions	$-.63_l$	1.17	65.90	11.17	1.77	1.22
Personal hygiene	$-.65_l$	1.04	67.78	13.55	2.00	1.12
Ability to concentrate	$-.67_{l-l}$	1.29	64.47	9.51	1.49	1.14
Speech ability	$-.73_{l-l}$	.70	73.06	9.51	1.28	1.11
Good judgment	$-.73_l$	.92	66.36	12.45	1.67	1.16
Psychological well-being	$-.82_l$	.87	66.43	10.78	1.80	1.19
Ability to handle finances	$-.86_{l-l}$	1.00	68.50	8.93	1.68	1.14
Sleeplessness *	$-.86_l$	1.11	60.00	10.91	1.63	1.07
Deal effectively with others	$-.86_l$	1.23	64.89	10.36	1.80	1.01
Boredom *	$-.92_{l-l}$	1.16	62.27	10.54	2.59	.87
Proneness to minor accidents *	$-.98_l$	1.21	66.82	6.74	1.41	.97
Susceptibility to depression *	-1.08_{l-l}	1.11	63.18	11.77	2.05	.99
Ability to prepare meals	-1.14_{l-l}	.85	74.19	7.31	1.60	.99
Ability to do necessary tasks	-1.14_{l-l}	.72	69.33	8.09	1.91	1.08
Physical dependence *	-1.14_{l-l}	1.30	72.08	6.51	1.69	1.11
Tolerance of new ideas	-1.14_l	1.18	58.26	9.26	2.37	1.16
Problem-solving ability	-1.18_{l-l}	1.13	66.51	9.97	1.72	1.24
Home maintenance	-1.22_{l-l}	1.27	67.35	8.84	1.80	1.12
Ability to learn new things	-1.29_{l-l}	1.03	62.83	10.04	1.74	1.16

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Recovery from illnesses	-1.31_{l-l}	1.27	63.20	8.91	1.62	1.10
Tendency to repeat self *	-1.31_{l-l}	.93	66.59	10.10	1.27	1.17
Housekeeping	-1.31_{l-l}	.79	69.57	6.98	1.43	.96
Emotional dependence *	-1.33_{l-l}	1.07	64.89	11.20	1.96	1.00
Mental alertness	-1.33_{l-l}	1.21	68.00	11.43	1.42	1.14
Fatigue *	-1.35_{l-l}	1.55	61.80	9.41	1.76	1.15
Remember names, numbers	-1.35_{l-l}	.77	66.09	10.85	1.48	1.09
Remember everyday tasks	-1.39_{l-l}	.70	66.60	9.82	1.52	1.09
Loneliness *	-1.39_{l-l}	1.34	70.40	8.56	2.30	1.09
Adaptability	-1.41_{l-l}	.70	61.06	8.66	2.30	.86
General health	-1.41_{l-l}	.85	65.51	9.37	2.06	1.25
Ability to work	-1.45_{l-l}	1.06	66.73	6.89	1.80	1.21
Hearing	-1.45_{l-l}	1.24	64.69	9.60	1.22	1.28
Physical coordination	-1.51_{l-l}	.90	67.80	9.10	1.60	1.20
Minor illnesses *	-1.53_{l-l}	1.05	64.31	8.31	1.43	1.15
Physical exercise	-1.57_{l}	1.33	58.54	10.52	2.96	.97
Visual ability	-1.65_{l-l}	.87	60.40	11.60	1.18	1.30
Worry physical problems *	-1.65_{l-l}	.84	57.20	9.48	2.42	.99
Fear of being alone *	-1.67_{l-l}	1.13	67.87	9.99	2.21	1.14
Driving competence	-1.71_{l-l}	.86	66.40	8.27	1.62	1.16
Reaction time	-1.84_{l-l}	1.08	65.29	9.87	1.49	1.35
Physical strength	-1.92_{l-l}	.80	65.69	7.28	2.08	1.28
Minor aches and pains *	-2.00_{l-l}	.69	62.94	10.06	1.65	1.32
Average Man target: Overall Average	-1.07	.39	65.10	9.66	1.81	1.12

Note: Subscript g = theory of gain item; subscript s = theory of stability items; subscript l = theory of loss item, subscript l - l = theory of loss item for all targets.

* Reverse-scored.

Mother, Average Man, r = .84, p = .000; Father, Average Woman, r = .86, p = .000; Father, Average Man, r = .88, p = .000; Average Man, Average Woman, r = .91, p = .000. In general, individuals indicated a high level of agreement as to the direction and relative ranking of change across items, both within and between target groups. Fisher's z tests revealed no significant differences between the item mean rankings for any combination of target pairs.

Developmental change versus stability.

Mean ratings of developmental change, for each of the four target forms, were as follows: Mother, M = -0.75; Father, M = -0.64; Average Woman, M = -0.99; Average Man, M = -1.07. Negative mean scores for all targets indicated that individuals predicted more developmental loss than gain in this set of functional attributes and abilities, for parents as well as generalized adults. Mean ratings of developmental loss, as opposed to gain, were obtained for the vast majority of items in each form.

Effects of target on ratings of developmental change.

A one way analysis of variance (ANOVA) indicated a significant overall effect of target for the average degree of loss expected to occur across all items, F (3, 202) = 13.70, p = .000; η^2, as generalized by r^2 = .17. The Student-Newman-Keuls test of significance indicated that the mean ratings of overall developmental loss for the Mother and Father targets were each significantly greater (i.e., closer to zero) than those obtained for either the Average Man or Average Woman target. In general, respondents who rated either of the parent targets predicted significantly less overall developmental loss than those who rated either of the generalized adult targets (see Figure 1).

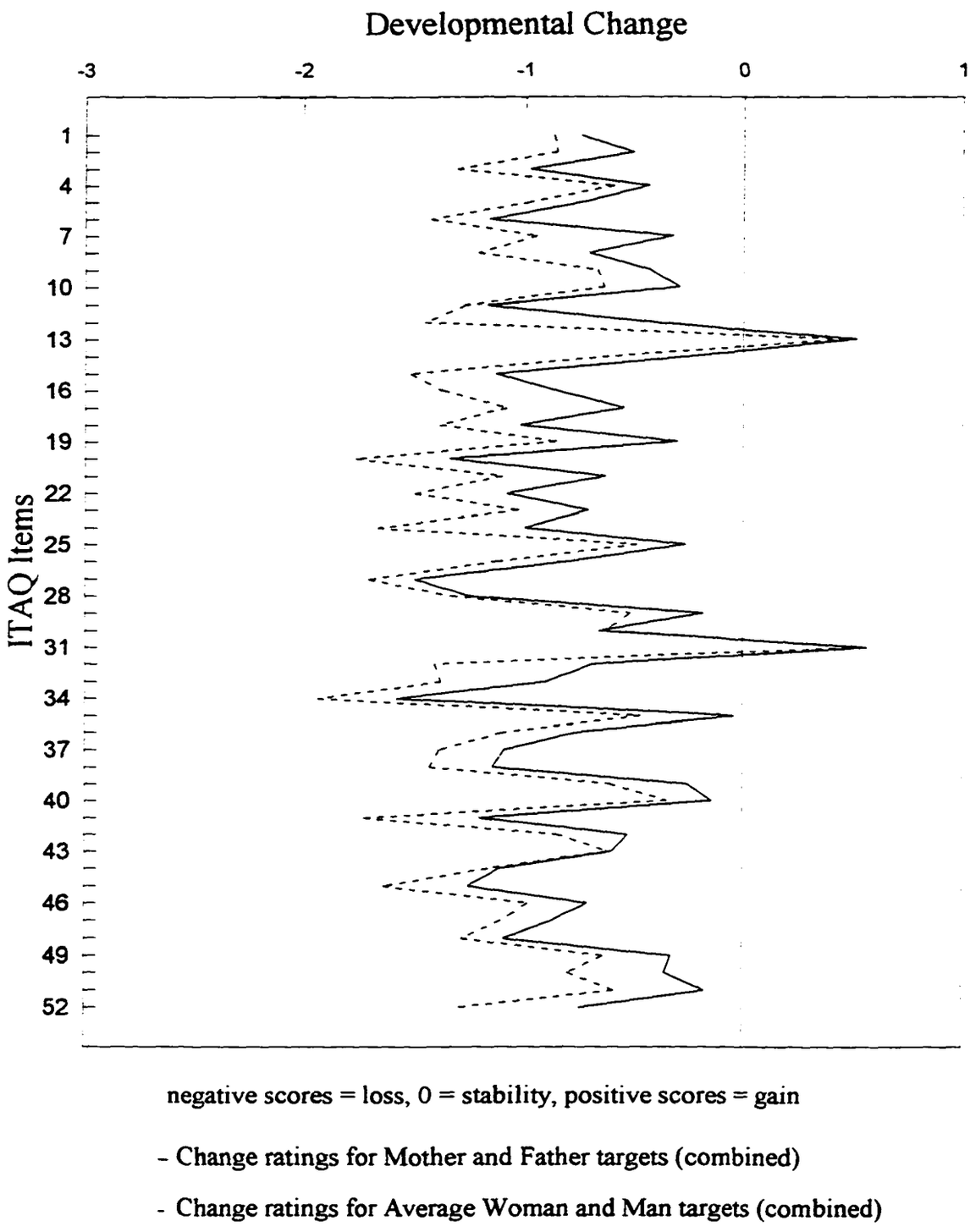

Figure 1. Average Change Ratings for Parents vs. Generalized Adults: Study 1

To examine target differences in change ratings, items were analysed as either theory of loss, theory of gain, or theory of stability. Paired samples t-tests were performed on each item mean for each target group ($\alpha = .01$). Items were labeled as theory of loss when the mean score on that item was significantly less than 0 (the value on the rating scale labeled no change), as theory of gain when the mean score was significantly greater than 0, and as theory of stability when the mean did not differ significantly from 0. Theory of gain, loss, and stability items for each target form are noted in Table 2 with subscripts g, l, and s, respectively. Theory of loss items that were common to the four target forms are indicated by l - l. Largely because of the shortage of gain items overall as well as the predominance of loss items for generalized targets, there were no theory of gain or theory of stability items common to all targets.

Chi-square (χ^2) comparisons were used to compare target groups in the proportion of items classified as changing with age (either loss or gain), as opposed to remaining stable: Mother, 79%; Father, 81%; Average Woman, 94%; Average Man, 94%. The difference between the Mother and Father forms did not reach significance, $\chi^2 (1, 52) = 0.07$, $p > .05$, nor did the difference between the Average Woman and the Average Man forms, $\chi^2 (1, 52) = 0.00$, $p > .05$. However, a significantly greater proportion of items were endorsed as change-sensitive for the Average Woman target than for either the Mother target, $\chi^2 (1, 52) = 5.20$, $p < .05$, or the Father target, $\chi^2 (1, 52) = 4.19$, $p < .05$. As well, significantly more change-sensitive items were endorsed for the Average Man target than were for either the Mother target, $\chi^2 (1, 52) = 5.20$, $p < .05$, or the Father target, $\chi^2 (1, 52) = 4.19$, $p < .05$. Thus, mothers and fathers were

expected, on average, to change with increasing age across a significantly smaller range of attributes and abilities than the average man or woman.

At the same time, both parents and generalized adults were expected to undergo many of the same kinds of developmental losses with increasing age. In all, 34 (65%) of the 52 items were classified as theory of loss items for all four target forms. An ANOVA revealed a significant overall effect of target for average change scores computed from across the theory of loss items common to all forms, F (3, 202) = 12.79, p = .000, r^2 = .16. A simple means analysis showed that respondents who rated either the Average Woman or Average Man target predicted a greater mean degree of decline in those loss items common to all targets than those who rated either the Mother or Father target: Average Woman, M = -1.23; Average Man, M = -1.33; Mother, M = -1.01; Father, M = - 0.87. Across those attributes or abilities for which aging-related declines were predicted for all target individuals, mothers and fathers were expected to undergo decline to a significantly lower average degree than generalized adults.

Age of change onset and degree of influence.

Respondents' conceptions about the timing and modifiability of developmental change were examined for only those items classified as theory of loss or theory of gain for each target form. The mean estimated age of change onset across change-sensitive items for each target form were as follows: Mother, M = 66.21; Father, M = 65.08; Average Woman, M = 65.77; Average Man, M = 65.32. For all targets, most predicted changes were expected to occur, on average, in the age range of the mid-60s.

The mean rating of perceived influence over expected change across change-sensitive items for each form were as follows: Mother, M = 1.41; Father, M = 1.43; Average Woman, M = 1.60; Average Man, M = 1.84. For all targets, average ratings were greater than 1 (i.e., the value on the rating scale labeled a little). In general, respondents indicated that both parents and generalized adults have some potential ability to influence aging-related change.

Effects of target on age of change onset and degree of influence.

Target differences in the estimated age of change onset and the level of perceived influence over change were examined by using only the 34 theory of loss items that were common to all four target forms. Separate ANOVAs were performed on the mean ages of change onset and the mean ratings of perceived influence. For all target individuals, the average age of predicted change onset was in the mid-60s: Mother, M = 66.39; Father, M = 64.82; Average Woman, M = 66.63; Average Man, M = 65.78. There was no significant overall effect of target for estimated age of change onset, F (3, 202) = 0.81, p = .490. Both parents and generalized adults were expected to undergo aging-related declines in the same set of functional attributes or abilities at about the same average chronological age.

However, there was a slight but significant overall effect of target for the mean level of perceived influence over predicted change across the 34 items, F (3, 202) = 5.21, p = .002, r^2 = .07. A simple means analysis indicated that respondents who rated the Average Man target assigned a significantly greater mean level of influence over change than those who rated any of the other three targets: Mother, M = 1.31; Father,

$\underline{M}$ = 1.37; Average Woman, $\underline{M}$ = 1.41; Average Man, $\underline{M}$ = 1.74. That is, significantly more potential influence over anticipated developmental losses was attributed to the generalized man than to either mothers, fathers, or the generalized woman.

Interrelationships Among belief components.

To examine the relationships among belief components of individuals' implicit theories, bivariate correlations were computed between mean ratings of change, age of onset, and perceived influence, for theory of loss items, for each target form separately. There was no significant correlation between the average degree of expected decline and the mean estimated age of change onset for any of the target forms: Mother, $\underline{r}$ = -.14, $\underline{p}$ = .422; Father, $\underline{r}$ = .07, $\underline{p}$ = .676; Average Woman, $\underline{r}$ = -.04, $\underline{p}$ = .800; Average Man, $\underline{r}$ = .08, $\underline{p}$ = .621. In general, there was no association between the expected severity of loss and the average age at which decline was thought to begin.

There was a significant positive relationship between mean item ratings of change and mean item ratings of perceived influence for the Mother, Father, and Average Woman target forms, but not for the Average Man target. Respondents indicated that these target individuals have less potential influence over relatively extreme developmental losses than they have over more moderate declines. As well, there was a significant, negative correlation between mean item ratings of perceived influence and mean estimated age of change onset, for all target forms. Both parents and generalized adult targets were seen as having a greater level of potential influence over changes that begin at relatively younger ages than those that occur at relatively older ages.

Hierarchical regression analyses were used to determine if knowing the average age of change onset associated with loss items improved prediction of ratings of perceived influence beyond that afforded by knowing average change scores. Separate analyses were performed for the Mother, Father, and Average Woman target forms. Analyses were done using SPSS-PC REGRESSION, as well as SPSS-PC EXPLORE in evaluation of assumptions. Sequence of entry was determined by the logical order in which the questionnaire asked respondents to consider the three belief components (i.e., degree of change versus stability, estimated age of change onset, degree of perceived influence over change). In addition, a simple regression analysis was performed for the Average Man target form, between the average ratings of perceived influence as the dependent variable and the mean estimated age of change onset as the independent variable.

Table 3 displays the correlations between the variables, the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β), the semipartial correlations (sr^2), and the R, R^2, and adjusted R^2 after entry of the IV(s). The R was significantly different from zero at the end of each step, for each of the hierarchical regressions. After Step 1, with degree of change in the equation, the value of R^2 for each of the three target forms were as follows: Mother, $R^2 = .21$, F_{inc} (1, 33) = 8.56, $p = .006$; Father, $R^2 = .28$, F_{inc} (1, 33) = 12.53, $p = .001$; Average Woman, $R^2 = .10$, F_{inc} (1, 46) = 5.18, $p = .028$. After Step 2, with age of change onset added to prediction of perceived influence by change scores, the value of R^2 for each target form were as follows: Mother, $R^2 = .56$, F_{inc} (2, 32) = 14.70, $p < .001$; Father, $R^2 = .64$,

Table 3

Summary of Hierarchical Regression Analyses for Variables Predicting Perceived Influence over Developmental Losses: Study 1

Mother target (n = 35)					
Variables	Perceived Influence (DV)	Degree of Change	B	ß	sr^2 (incremental)
Degree of Change	.45		0.509	0.37	.21**
Age of Change Onset	-.65	-.14	-0.072	-0.60	.35***
Father target (n =35)					
Variables	Perceived Influence (DV)	Degree of Change	B	ß	sr^2 (incremental)
Degree of Change	.53		0.618	0.57	.28***
Age of Change Onset	-.56	.07	-0.056	-0.60	.36***
Average Woman target (n =48)					
Variables	Perceived Influence (DV)	Degree of Change	B	ß	sr^2 (incremental)
Degree of Change	.32		0.363	0.30	.10*
Age of Change Onset	-.42	-.03	-0.043	-0.41	.17**

* $p < .05$. ** $p < .01$. *** $p < .001$

F_{inc} (2, 32) = 31.90, $p < .001$; Average Woman, $R^2 = .27$, F_{inc} (2, 45) = 10.15, $p < .01$. Addition of estimated age of change onset resulted in a significant increment in R^2 for all three target forms.

The R for regression of mean ratings of perceived influence for loss items associated with the Average Man target was significantly different from zero, F (1, 42) = 14.02, $p = .001$; B = -.05; $\beta = -.50$. The mean estimated age of change onset contributed

25% (23% adjusted) to the variability in mean ratings of perceived influence.

Respondent variables.

Correlational analyses showed that several respondent variables were related to average ratings of developmental change across items, but the pattern of correlations differed by target. Because respondent gender was significantly correlated with change ratings for the Mother target form ($r = -.34$, $p = .016$), correlational data for that form were examined separately for men and women. Whereas women's average change scores for the Mother target were associated with several respondent variables, men's change ratings were not significantly related to any of the measured variables. Thus, separate regression analyses were performed on the Father, Average Man, and Average Woman target data, and women's responses to the Mother target form.

For each target form, standard multiple regressions were performed using average change scores as the dependent variable and correlated respondent variables as independent variables. Analyses were performed using SPSS-PC REGRESSION. Table 4 displays the correlations between variables, the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β), the semipartial correlations (sr^2), and the R, R^2, and adjusted R^2.

The R for regression of average change scores of women rating the Mother target was significantly different from zero, $F(3, 31) = 4.24$, $p = .013$. Of the three independent variables, only the mother-child relationship contributed significantly to prediction of average change ratings ($sr^2 = .10$). The closer the mother-daughter relationship, the less overall decline was anticipated for one's mother as she grows older.

Table 4

Summary of Simultaneous Multiple Regression Analyses for Demographic Variables Predicting Mean Ratings of Change: Study 1

Mother target, women only (n = 34)

Variables	Avg. Change (DV)	Mother-child Relationship	Mother's Perc. Age Identity	B	ß	sr^2 (unique)
Mother-child Relationship	-.43			-0.177*	-0.33	.10
Mother's Perc. Age Identity	-.37	.24		-0.098	-0.19	
Number of Siblings	-.33	.21	.31	-0.049	-0.23	

Intercept = -0.205
R^2 = .29
Adj. R^2 = .22
R = .54**

Father target (n =49)

Variables	Avg. Change (DV)	Mother's Health Status vs. Perfect	Subject's Educ.	Mother's Health Status vs. Others	B	ß	sr^2 (unique)
Mother's Health Status vs. Perfect	-.46				-0.280*	-0.61	.09
Subject's Educ.	.36	-.12			0.091*	0.30	.09
Mother's Health Status vs. Others	-.31	.86	-.07		0.103	0.23	
Father-child Relationship	-.21	.03	-.06	-.11	-0.069	-0.15	

Intercept = -1.295
R^2 = .35
Adj. R^2 = .29
R = .59***

(table continues)

Average Woman target (n =48)

Variables	Avg. Change (DV)	Father-child Relationship	Father's Age	B	ß	sr^2 (unique)
Father-child Relationship	-.48			-0.162**	-0.41	.13
Father's Age	.33	.01		0.015**	0.36	.15
Mother's Interests	-.31	.33	.15	-0.007	-0.22	
				Intercept	= -1.174	
				R^2	= .38	
				Adj. R^2	= .34	
				R	= .62***	

Average Man target (n = 51)

Variable	Avg. Change (DV)	B	ß	sr^2 (unique)
Father's Occ. Status	-.35	-0.134	-0.35**	
		Intercept	= -0.684	
		R^2	= .12	
		Adj. R^2	= .10	
		R	= .35**	

* p < .05. ** p < .01. *** p < .001

Altogether, 29% (22% adjusted) of the variability in change ratings was predicted by knowing scores on these three independent variables. Although average change scores were significantly correlated with number of siblings (r = -.37, p = .014), as well as with mother's perceived age identity (r = -.33, p = .025), these two variables did not contribute significantly to regression. Post-hoc evaluation of the bivariate correlations using a conservative F-test (as recommended by Tabachnick & Fidell, 1989) revealed that they were not significantly different from zero: Mother's perceived age identity, F (3,31) = 1.26, p > .05; Number of siblings, F (3,31) = 1.48, p > .05. Apparently, the contribution of number of siblings and mother's perceived age identity to prediction of average change

ratings is an indirect result of the relationship between these variables and the mother-child relationship.

The R for regression of average ratings of change for the Father target was significantly different from zero, F (4, 49) = 5.88, p = .000. Of the four variables entered into the regression equation, two were found to contribute significantly to prediction of change scores: Subjective ratings of mother's health status (as compared to a perfect state of health), sr^2 = .09; and Respondent's educational level, sr^2 = .09. Better perceived health status of mother and fewer years of respondent's formal education were associated with expectations of less aging-related loss for one's father. The failure of the variable, mother's health status as compared to others her own age, to contribute significantly to the equation is most likely due to the high correlation between the two indicators of perceived maternal health (r = .86). The father-child relationship also failed to contribute significantly to the regression equation. Together, 35% (29% adjusted) of the variability was predicted by knowing scores on these four variables.

The R for regression of average change ratings for the Average Woman target was significantly different from zero, F (3, 48) = 8.97, p = .000. Two of the three independent variables contributed significantly to the prediction of average change ratings for the Average Woman target: Father's age, sr^2 = .13, and Father-child relationship, sr^2 = .15. The failure of the variable, perceived age decade of mother's perceived interests, to add significantly to the regression equation may be due in part to its significant correlation with the father-child relationship. The most optimistic perceptions of aging-related change in the average woman were associated with having

younger fathers and a closer father-child relationship. Altogether, knowing the age of the respondent's father, the perceived closeness of the father-child relationship, and the age associated with mother's interests contributed 38% (34% adjusted) to prediction of average change scores.

Father's occupation was a significant predictor of change ratings for the Average Man target. Higher occupational status of the father (i.e., from unskilled to professional) was associated with predictions of greater overall decline for the Average Man target. The $\underline{R}$ for regression was significantly different from zero, $\underline{F}(1.\ 47) = 6.56$, $\underline{p} = .014$. Knowing the occupational status of the respondent's father contributed 12% (10% adjusted) to the variability in average change scores.

As displayed in Table 5, zero-order correlations were computed to examine the relationship between average change scores and perceived parental health problems which currently require medical treatment. That is, the subset of individuals who reported having a mother or father who currently requires medical treatment for a chronic or acute illness also rated the degree to which the perceived health problem(s) interfere(s) with the parent's day-to-day functioning (1 = not at all to 4 = quite a lot).

Only one correlation was significant: For the Mother target form only, there was a negative association between average ratings of change and the degree to which mother's perceived health problems are thought to interfere with her functioning. Here, higher levels of perceived functional impairment in one's mother were associated with predictions of greater developmental losses for her as she grows older.

Table 5

Relationship Between Degree to Which Parental Health Problems are Perceived to Interfere with Functioning and Mean Ratings of Change: Study 1

		Degree of Interference		Degree of Change			
	n	M	SD	M	SD	r	p
Mother target							
Mother with health problems requiring medical treatment	15	2.13	.64	-.88	.28	-.63	.012
Father with health problems requiring medical treatment	8	2.13	.64	-.80	.24	-.36	ns
Father target							
Mother with health problems requiring medical treatment	11	2.36	1.10	-.80	.47	-.58	ns
Father with health problems requiring medical treatment	11	2.27	.67	-.74	.41	-.15	ns
Average Woman target							
Mother with health problems requiring medical treatment	12	2.00	.74	-.93	.33	.41	ns
Father with health problems requiring medical treatment	15	2.60	.99	-.90	.24	-.14	ns
Average Man target							
Mother with health problems requiring medical treatment	12	2.08	.91	-1.06	.39	.06	ns
Father with health problems requiring medical treatment	18	2.00	.90	-1.10	.41	.11	ns

Summary and Discussion

The aim of this study was to investigate how adult children's developmental beliefs and expectations for their parents may differ from normative conceptions of aging. In a multiple target questionnaire developed for this purpose, respondents rated either their mother, their father, the average woman, or the average man on 76 functional attributes and abilities, as to: (a) the degree of change predicted to occur across the latter half of the life course, (b) the age decade during which specific changes were expected to begin, and (c) the degree to which the target individual was thought to have the ability to influence change. Results of this exploratory study suggest that the ITAQ is a sensitive and reliable measure of individuals' subjective beliefs about aging in multiple targets. There were high levels of both inter-target and intra-target consensus regarding the direction and relative severity of aging-related changes. For all targets, the vast majority of items were classified as theory of loss, as opposed to theory of gain or stability. There was also considerable similarity in the specific kinds of aging-related change predicted for parents and generalized adults. Thus, the overall aging profile for parents essentially mirrored normative conceptions of developmental change throughout old age, which typically involve considerably more change than stability and more losses than gains (Heckhausen, Dixon, & Baltes, 1989; Heckhausen & Krueger, 1993; Ross, 1989).

At the same time, although the results suggested that people's normative conceptions of aging may be used as a generic framework for predicting developmental change in their parents, expectations for parents' aging were strongly and optimistically

biased. As compared to normative conceptions of change, individuals generally anticipated far fewer and far less severe aging-related declines in specific aspects of their parents' everyday functioning. Thus, it appears that individuals tend to moderate normative conceptions of development when considering the potential for aging-related change in their parents.

Interestingly, there was little evidence that the optimistic bias in favor of parents generalized to other belief components of individuals' implicit theories of aging. On average, respondents predicted that both their parents and generalized adults would begin most developmental declines during the age range of the mid-60s. In a similar study, Heckhausen, Dixon, and Baltes (1989) asked respondents to predict the chronological age of change onset in various personality traits, but did not report average ratings. From the information they did provide, however, it appeared that individuals may tend to perceive aging-related changes in personality functioning as occurring at somewhat earlier ages than the aspects of everyday functioning assessed by the ITAQ.

There were also no indications that a positive bias toward parents extended to attributions of personal control over the course of aging-related change. Mothers, fathers, and the average woman were seen as having roughly the same potential ability to influence the course of expected losses (i.e., average ratings of a little to moderate). A slightly higher average degree of influence over change was attributed to the generalized man than to other targets, but all average ratings were located well below the mid-point of the scale. Others have reported much more favorable perceptions of

personal control over developmental change in personality traits, as measured on similar scales (e.g., Heckhausen & Baltes, 1991; Heckhausen & Krueger, 1993). The apparent discrepancy in findings may reflect differences in item content. Numerous items in the ITAQ represent aspects of physiological functioning, which may be viewed as less modifiable at older ages, as compared to personal traits. Thus, although adult children may moderate normative expectations about the range and severity of developmental change with respect to their parents, this optimistic bias may not generalize to their subjective beliefs about the timing and modifiability of loss.

A target bias was also not apparent in the logical relations among the three measured belief components. Irrespective of target, severity of decline was not associated with the estimated age of onset, but for three of the four target forms, change severity was related to modifiability of change. For mothers, fathers, and the average woman, but not the average man, less severe losses were considered more amenable to personal influence than those more severe in degree. Judgments of modifiability were also found to be related to the estimated age of change onset. For all target forms, losses occurring at relatively earlier ages were generally considered more subject to influence than those occurring later. Exploratory regression analyses indicated that, with respect to one's parents and the average woman, individuals' subjective beliefs about the ability to influence aging-related decline may be based in part on the perceived severity of the loss, as well as the chronological age at which it is thought to begin. With respect to the average man as target, judgments of influence over loss may be derived in part from the perceived age of change onset. On the whole, these findings seem consistent with those

of Heckhausen and Baltes (1989), who found that personality attributes believed to change at earlier adult ages tend also to be seen as more controllable than those thought to change at later adult ages.

Participants in this study provided a vast amount of information about themselves and their families, any of which might be considered relevant to their subjective beliefs about aging. Correlational and regression analyses identified for each target a different set of respondent variables associated with judgments of change severity. For example, whereas the mother-daughter relationship was a significant predictor of average change scores for women who rated the Mother target, mother's perceived health status and the respondent's educational level contributed to the variability of change ratings for the Father target. The combination of father's age and the father-child relationship contributed to developmental beliefs about the Average Woman, whereas information about the father's occupational status was the sole significant predictor of change scores for the Average Man target. For those respondents who described their mother as having a serious health problem requiring medical treatment, increased levels of perceived impairment in functioning as a result of the health problem were associated with expectations of greater decline in the mother. This suggests that the specific personal and family variables that influence subjective beliefs about aging may vary according to whether the perceptual target is one's mother, one's father, the generalized woman, or the generalized man.

Prior to analysis, 24 items were discarded for various reasons, such as conceptual ambiguity, overly negative connotation, or bimodal change score distributions. The five

discarded bimodal items seemed to pertain mostly to social or interpersonal attributes or activities, such as, participation in community activities, socializing with friends and acquaintances, and tendency to seek or initiate recreational and social activities. Of the respondents who anticipated developmental change in these items, most indicated (in roughly equal proportions) either increases (i.e., gains) beginning in middle age, or conversely, decreases (i.e., losses) at much later ages.

One possible explanation of this finding is that people hold multiple theories of developmental change for specific aspects of interpersonal functioning (i.e., the perception of developmental gain beginning in middle age versus the perception of loss occurring at older ages). There were no indications that individuals' responses to bimodal items reflected a generally optimistic versus pessimistic outlook on aging-related change overall. There were moderate positive correlations among the bimodal items (i.e., r ranged from .10 to .47), which most likely reflect their conceptual similarity. However, the correlation between respondents' average ratings of change across the five bimodal items and their average ratings of change across the final set of ITAQ items was considerably lower (r = .38, p = .000) than the correlation between mean ratings of change for five randomly selected attributes and mean ratings of change across the remainder of ITAQ items (r = .73, p = .000). Thus, it does not seem likely that individuals' responses to this set of bimodal items indicated a consistent tendency to perceive other kinds of aging-related change in a similar manner.

Alternatively, people may generally perceive these attributes as changing in multiple ways across the adult life course (e.g., gain throughout middle age followed by

subsequent loss in old age), which is not reflected in a single response format. These possibilities suggest that the revised version of the ITAQ focuses on functional attributes and abilities that reflect a widely shared theory of stability or theory of unidirectional change across the latter portion of the adult life course.

Study 2

The results of the first study strongly suggested that, in general, people share highly similar beliefs about the nature, timing, and modifiability of aging-related change in numerous aspects of everyday functioning. Overall, individuals perceive that increasing age brings more change than it maintains stability, and that change is far more likely to involve functional decline than enhancement. The use of a multiple target questionnaire indicated that, although normative conceptions of aging may serve as a developmental guide for predicting aging-related change in one's parents as they grow older, subjective expectations of decline in one's mother or father may be considerably moderated, in terms of both perceived extent and severity.

While this approach to assessing implicit theories was novel and may be potentially useful, are these findings reliable? How might individuals' implicit theories of aging-related change as measured by the ITAQ relate to other kinds of beliefs about old age? To address these questions, the second study was undertaken to both replicate the findings of the first, and to extend them by exploring the possible relationship between one's subjective perceptions of aging-related change and one's factual knowledge of old age and the elderly.

Method

Participants.

Participants were obtained through the University of Victoria's Psychology Department Subject Pool. In all, 215 adults participated in Study 2 (age range: 17-57 years; M age = 20 years; 63 men and 152 women). A demographic summary of the sample is presented in Table 6.

The personal characteristics of participants were very similar to those of respondents in Study 1. The slight difference in mean age between the two samples was probably a function of the academic term from which samples were drawn (i.e., Summer versus Winter semester). As in the first study, most respondents reported English as the first language of themselves and their parents (self, 93%; fathers, 73%; mothers, 75%). In total, 9 different languages were indicated for participants, and an average of 26 languages were attributed to parents. Subjects were classified as either English as first language or non-English as first language for correlational analysis.

On average, most respondents described themselves as being unmarried and in good overall health. Most reported having one or two siblings and a close relationship with both parents, with whom they reside or from whom they live less than 500 miles. Parents were reported as being, on average, in their late forties, well-educated, and of upper-level occupational status (i.e., either sales/management or professional).

Materials.

In addition to the ITAQ, participants in the second study completed the Facts on Aging Quiz, Form 1 (FAQ1, Palmore, 1988). With respect to the reliability and validity

Table 6

Demographic Characteristics of Subject Sample: Study 2

Variable	M	SD	n
Age	19.79	4.15	215
Education (in years)	12.85	.99	215
Number of children	.04	.32	207
Health compared to perfect state (1 = very good; 5 = very poor)	1.62	.64	215
Health compared to age cohort (1 = very good; 5 = very poor)	1.61	.62	215
Number of siblings	1.80	1.32	215
Father's age	49.94	5.26	205
Mother's age	47.17	4.57	212
Father's education (in years)	14.64	3.29	214
Mother's education (in years)	14.06	2.77	215
Father's health compared to perfect state (1 = very good; 5 = very poor)	2.38	.87	205
Father's health compared to age cohort (1 = very good; 5 = very poor)	2.12	.93	205
Father's health, interference with functioning (1 = not at all; 4 = quite a lot)	2.05	.83	58
Mother's health compared to perfect state (1 = very good; 5 = very poor)	2.19	.87	212
Mother's health compared to age cohort (1 = very good; 5 = very poor)	2.03	.93	212
Mother's health, interference with functioning (1 = not at all; 4 = quite a lot)	2.39	.88	46
Relationship closeness, father (1 = very close; 4 = not close at all)	1.95	.92	207
Relationship closeness, mother (1 = very close; 4 = not close at all)	1.50	.65	212
Mother's age identity (1 = young; 4 = old)	1.92	.31	106
Age, mother looks	38.06	6.11	103
Age, mother does	38.16	9.16	103
Age, mother's interest	37.86	7.88	103
Father's age identity (1 = young; 4 = old)	1.93	.43	101
Age, father looks	42.63	7.08	99
Age, father does	37.78	9.64	99
Age, father's interests	37.27	9.01	99

(table continues)

Variable	n	Percentage
First language, self		
English	199	93
Non-English	16	7
First language, mother		
English	162	75
Non-English	53	25
First language, father		
English	158	73
Non-English	57	27

of the original version of the FAQ1 as a measure of knowledge about aging, Palmore (1988) cited dozens of studies which attest to its high group score reliability (i.e., the consistency with which comparable educational and professional groups produce similar mean scores), and where evaluated, to its good test-retest reliability. Several researchers have also reported highly similar rank orderings of frequent misconceptions in terms of percentage wrong (e.g., Holtzman & Beck, 1979).

There is general agreement that items on the FAQ1 clearly reflect facts about aging, indicating that the measure has face validity. Several cross-cultural comparisons have shown the FAQ1 to have high cross-cultural generalizability (e.g., Matthews, Tindale, & Norris, 1984; Romeis & Sussman, 1980). There is also considerable evidence of the FAQ1's criterion-related validity, as indicated by its ability to differentiate between groups that are assumed to differ in general knowledge or knowledge about aging (e.g., Holtzman & Beck, 1979; Norris, Tindale, & Matthews, 1987). As well, Holtzman and Beck reported that the majority of items taken individually differentiated between

occupational groups in the health field. However, Miller and Dodder (1984) found no significant correlation between scores on the FAQ1 and the amount of coursework in gerontology among a sample of undergraduate students. Norris et al. (1987) concluded that the FAQ1 has predictive power, as was reflected in a significant positive correlation between FAQ1 scores and final grades for social gerontology students.

It has been maintained that the FAQ1's face validity, its consistent ability to differentiate groups assumed to have varying levels of knowledge about aging, and its rank-order consistency of frequent misconceptions suggest that the FAQ1 is a valid measure of knowledge about aging (Holtzman & Beck, 1979; Palmore, 1988). In contrast, others have argued that the FAQ1's poor item-total correlations, ambiguous factor structure, and only moderate levels of internal consistency render the original version as an inadequate measure of level of knowledge about aging (Klemmack, 1978; Norris, Tindale, & Matthews, 1987).

For example, Klemmack (1978) performed a factor analysis on items from the original version of the FAQ1, which had been classified by Palmore (1977) as reflecting either a positive, a negative or a neutral age bias. The results led Klemmack to conclude that FAQ1 scores may be more a function of negative images of older persons than a function of knowledge about aging. Consistent with this possibility, Kline, Scialfa, Stier, and Babbitt (1990) found that, compared to initial overall scores on the FAQ1 obtained by respondents in a repeated measures design, those who were subsequently instructed to induce a negative bias received deflated scores, but the scores of those who were told to assume a positive stance did not significantly differ from their initial scores.

However, in their investigation of the factor structure of the FAQ1, Norris, Tindale, and Matthews (1987) found little evidence of a dominant image component.

Perhaps more importantly, several studies have reported at best only modest correlations between scores on the original version of the FAQ1 and direct measures of attitude toward old age (e.g., Holtzman & Beck, 1979; O'Hanlon, Camp, & Osofsky, 1993). To the extent that a complete separation of knowledge and attitudes about aging may be unattainable (Kline, Scialfa, Stier, & Babbitt, 1990), low albeit significant correlations between the FAQ1 and measures of attitude might be taken as support for the FAQ1's discriminant validity as a measure of level of knowledge as opposed to an indicator of attitudes toward aging.

Only a few studies have examined the relationship between scores on the FAQ1 and scores on other knowledge measures. In one such study, Kline, Scialfa, Stier, and Babbitt (1990) reported nearly identical mean scores obtained by separate samples on the FAQ1 and their own test, the Knowledge of Aging and the Elderly questionnaire (KAE), indicating a similar degree of difficulty. However, O'Hanlon, Camp, and Osofsky (1993) subsequently found that overall scores on the FAQ1 and the KAE were only modestly correlated, although items from both tests that shared similar content showed considerably higher correlations.

Although Palmore has acknowledged that the psychometric qualities of the original version of the FAQ1 could be improved (Palmore, 1978), he has argued that its shortcomings do not affect its validity as a test designed to directly measure one's ability to distinguish correctly the truth or falsity of factual statements about aging (Palmore,

1978, 1988). The present study employed Palmore's revised version of the FAQ1, which incorporates many of the changes advocated by Miller and Dodder (1980), such as improvements in the wording of items and the addition of a don't know response category. In their comparison of the two versions of the FAQ1, Courtenay and Weidemann (1985) found that the addition of a don't know response category substantially improved internal reliability scores. They further concluded that the use of a don't know response increases the validity of the FAQ1 by reducing guessing, as was reflected in a significant decrease in the proportion of incorrect responding.

Procedures.

The methods and materials used to obtain informed consent and personal information about participants and their families were essentially the same as those described for Study 1. The four target forms of the revised ITAQ were randomly distributed to participants (see Appendix F, in which * indicates items eliminated from the version administered in Study 1): (a) 15 men and 41 women completed Form 1 (Mother), (b) 14 men and 38 women completed Form 2 (Father), (c) 19 men and 34 women completed Form 3 (Average Woman), and (d) 15 men and 39 women completed Form 4 (Average Man). Individuals were instructed to request an alternative form if the one assigned to them pertained to a deceased parent. Four of the 12 participants who reported having at least one deceased parent requested an alternative form of the questionnaire.

Thus, all participants completed the FAQ1 in addition to one target form of the ITAQ. The order in which the two questionnaires were presented was counterbalanced

across individuals. Respondents were provided with a rationale for the study (Appendix G) following their participation, as well as the opportunity to receive a summary of the results.

Results

Examination of data.

Of the 215 questionnaires completed, 3 were unanalysable: Two contained 25% or more missing responses, and one was considered spoiled due to response set (i.e., all change ratings were positive values). Data were examined and analysed using SPSS-PC Version 6. SPSS-PC EXPLORE was used to identify cases with extreme values in the boxplot for each form. Extreme values of mean ratings of change, estimated age of change onset, and perceived influence over change were modified to values .01 more or less than the next highest or lowest score in the distribution. An alpha level of .05 was used for all statistical tests unless otherwise stated.

Reverse-scoring.

The ITAQ contains 16 items that are reverse-scored to maintain conceptual consistency and to facilitate change score interpretation. After reverse-scoring, all items with negative scores can be interpreted as developmental losses, and positive scores are seen as developmental gains. Obtained means and standard deviations for each item (after reverse-scoring), within each target group, are displayed in Table 7.

Scale reliability and inter-target consensus.

Reliability estimates for each target form as measured by Cronbach's alpha were as follows: Mother, $\alpha = .91$; Father, $\alpha = .89$; Average Woman, $\alpha = .86$; Average

Table 7

Mean Ratings of Change by Target Form: Study 2

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Mother target (n = 56)						
Family contact	$.57_g$	1.28	60.30	12.37	3.03	.92
Hobbies/recreation	$.30_s$	1.72				
Follow medical instructions	$.05_s$	1.01				
Ability to communicate needs	$-.04_s$	.82				
Personal hygiene	$-.05_s$	.75				
Good judgment	$-.05_s$	1.03				
Tendency to be angry/upset *	$-.09_s$	.84				
Belief in competence	$-.13_s$	1.10				
Sleeplessness *	$-.15_s$	1.23				
Deal effectively with others	$-.16_s$	1.13				
Tolerance of new ideas	$-.21_s$	1.26				
Self-esteem	$-.25_l$	.94	56.55	10.10	2.31	1.04
Speech ability	$-.26_s$	.78				
Boredom *	$-.28_s$	1.12				
Psychological well-being	$-.29_l$	.85	64.33	10.73	1.83	1.12
Ability to concentrate	$-.32_s$	1.08				
Ability to learn new things	$-.38_{l-l}$	1.41	59.38	11.74	1.88	1.20
Tendency to dwell on past *	$-.44_s$	1.13				
Ability to handle finances	$-.46_l$	1.03	67.50	12.44	1.41	1.01
Proneness to minor accidents *	$-.47_s$	1.25				
Tendency to repeat self *	$-.50_{l-l}$	1.18	65.56	11.07	1.46	1.15
Ability to use public transit	$-.50_{l-l}$	.89	70.00	9.81	1.36	1.16
Fatigue *	$-.54_s$	1.86				
Anxiety about future *	$-.56_{l-l}$	1.32	58.11	10.50	2.41	1.12
Ability to prepare meals	$-.57_{l-l}$	.89	71.21	9.92	1.33	.99
Problem-solving ability	$-.65_{l-l}$	1.24	63.41	12.77	1.32	1.38

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Susceptibility to depression *	$-.65_{1-1}$	1.19	61.63	11.53	1.79	1.08
Ability to do necessary tasks	$-.67_{1-1}$	.79	69.43	8.73	1.37	.84
Adaptability	$-.70_{1-1}$	1.09	60.77	10.36	1.87	1.08
Ability to work	$-.71_{1-1}$	1.26	64.88	10.52	1.54	1.16
Physical dependence *	$-.73_{1-1}$	1.08	71.36	8.52	1.21	1.08
Remember long past events	$-.73_{1}$	.88	66.32	9.13	1.03	.91
Physical exercise	$-.73_{1-1}$	1.51	57.29	11.44	2.81	1.07
Hearing	$-.73_{1-1}$	1.17	66.98	10.36	.63	.82
Loneliness *	$-.77_{1-1}$	1.15	66.15	11.38	1.77	.87
Minor illnesses *	$-.88_{1-1}$	1.10	62.50	12.22	1.35	1.09
Worry physical problems *	$-.88_{1-1}$	1.35	60.00	12.06	2.27	1.07
Housekeeping	$-.89_{1-1}$	.73	69.76	9.50	1.19	.77
Fear of being alone *	$-.89_{1-1}$	1.17	63.75	12.54	1.97	.92
Home maintenance	$-.91_{1-1}$	1.01	64.88	10.28	1.22	.99
Mental alertness	$-.95_{1-1}$	1.01	65.53	10.39	.91	1.00
Emotional dependence *	$-.95_{1-1}$	.98	60.45	10.77	1.80	.82
Driving competence	-1.00_{1-1}	1.05	65.85	11.61	1.27	.98
Remember everyday tasks	-1.05_{1-1}	.80	66.59	11.60	1.43	1.02
General health	-1.15_{1-1}	.95	63.56	11.51	1.64	1.33
Physical coordination	-1.16_{1-1}	.90	69.17	10.28	1.19	.84
Recovery from illnesses	-1.16_{1-1}	1.00	62.75	11.15	1.28	1.07
Reaction time	-1.20_{1-1}	1.24	64.12	8.76	1.00	.92
Remember names, numbers	-1.20_{1-1}	.85	64.17	12.35	1.13	.88
Minor aches and pains *	-1.31_{1-1}	1.48	59.43	10.82	1.43	1.10
Physical strength	-1.39_{1-1}	.97	63.58	10.94	1.50	1.20
Visual ability	-1.45_{1-1}	.86	62.20	10.55	.74	.88
Mother target: Overall Average	-0.99	1.09	64.34	10.78	1.46	1.01

(table continues)

Items	Degree of Change M	Degree of Change SD	Age of Change M	Age of Change SD	Degree of Influence M	Degree of Influence SD
Father target (n =52)						
Family contact	.33$_{s}$	1.41				
Hobbies/recreation	.15$_{s}$	1.59				
Belief in competence	-.04$_{s}$	.95				
Good judgment	-.06$_{s}$	.96				
Fatigue *	-.06$_{s}$	1.91				
Self-esteem	-.10$_{s}$	.78				
Ability to communicate needs	-.15$_{s}$	1.04				
Tendency to dwell on past *	-.17$_{s}$	1.06				
Tendency to be angry/upset *	-.21$_{s}$	1.02				
Tolerance of new ideas	-.23$_{s}$	1.18				
Ability to handle finances	-.25$_{s}$	.86				
Personal hygiene	-.25$_{s}$	.68				
Follow medical instructions	-.29$_{s}$	1.03				
Psychological well-being	-.33$_{s}$	1.06				
Proneness to minor accidents *	-.33$_{s}$	1.10				
Ability to use public transit	-.37$_{l-1}$	1.00	73.50	6.71	1.40	.88
Deal effectively with others	-.38$_{l}$	.89	63.20	10.30	1.76	1.05
Sleeplessness *	-.40$_{s}$	1.19				
Remember long past events	-.40$_{s}$	1.19				
Speech ability	-.44$_{l}$	.61	78.00	4.10	.55	.83
Boredom *	-.48$_{l}$	1.24	63.61	7.98	2.50	1.11
Anxiety about future *	-.50$_{l-1}$	1.15	60.00	11.92	2.13	1.10
Ability to concentrate	-.52$_{l}$	.85	65.00	8.45	1.17	.85
Housekeeping	-.52$_{l-1}$	.96	71.25	8.71	1.50	.88
Physical dependence *	-.52$_{l-1}$	1.26	73.17	8.20	1.15	.99
Problem-solving ability	-.54$_{l-1}$	1.00	66.49	8.57	1.51	1.02
Ability to learn new things	-.56$_{l-1}$	1.04	62.82	11.23	1.62	1.18
Emotional dependence *	-.62$_{l-1}$	1.11	64.25	8.44	1.75	1.03

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Ability to prepare meals	-.62$_{1-1}$	.82	72.14	9.95	1.36	1.03
Tendency to repeat self *	-.62$_{1-1}$	1.14	64.62	10.72	1.13	1.08
Adaptability	-.63$_{1-1}$	1.01	61.47	10.19	1.79	.91
Susceptibility to depression *	-.65$_{1-1}$	.95	64.12	11.04	1.68	1.07
Ability to do necessary tasks	-.67$_{1-1}$	.83	70.56	8.60	1.28	.94
Home maintenance	-.69$_{1-1}$	.94	67.71	6.46	1.37	1.06
Ability to work	-.69$_{1-1}$	.96	66.67	8.90	1.24	.97
Loneliness *	-.71$_{1-1}$	1.18	68.81	10.87	1.93	1.00
Worry physical problems *	-.77$_{1-1}$	1.06	59.76	11.37	2.12	1.15
Mental alertness	-.79$_{1-1}$	1.00	66.17	11.34	1.13	1.13
Driving competence	-.88$_{1-1}$	1.00	69.21	8.18	1.14	.92
Fear of being alone *	-.98$_{1-1}$	1.00	64.84	10.92	1.77	1.14
Physical exercise	-1.00$_{1-1}$	1.27	60.21	10.93	2.34	1.32
Physical coordination	-1.10$_{1-1}$	.80	66.00	9.86	1.09	1.02
Minor illnesses *	-1.12$_{1-1}$	1.06	65.80	9.28	1.10	1.05
Recovery from illnesses	-1.13$_{1-1}$	1.07	64.69	9.81	1.27	.93
Remember everyday tasks	-1.15$_{1-1}$	.70	67.05	8.78	1.18	.92
Hearing	-1.19$_{1-1}$	.99	66.73	9.22	.65	.93
Minor aches and pains *	-1.21$_{1-1}$	1.42	62.24	8.96	1.27	1.08
Remember names, numbers	-1.25$_{1-1}$	.71	67.83	10.09	.96	.82
General health	-1.25$_{1-1}$	.79	66.25	10.03	1.48	1.27
Visual ability	-1.31$_{1-1}$	.61	62.71	9.39	.58	.87
Reaction time	-1.42$_{1-1}$	.72	65.21	10.10	.74	.87
Physical strength	-1.62$_{1-1}$	.69	65.80	9.06	1.30	1.05
Father target: Overall Average	-0.61	1.02	66.10	9.44	1.39	1.02

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Average Woman target (n = 53)						
Family contact	$.53_g$	1.55	64.62	9.96	2.31	1.22
Hobbies/recreation	$.42_s$	1.63				
Follow medical instructions	$-.36_s$	1.32				
Good judgment	$-.43_s$	1.38				
Tendency to be angry/upset *	$-.47_l$	1.12	63.24	9.76	1.85	.89
Ability to communicate needs	$-.51_l$	1.01	67.59	10.57	1.62	1.01
Belief in competence	$-.57_l$	1.43	66.90	9.75	2.00	1.08
Self-esteem	$-.58_l$	.86	59.73	11.18	1.81	.94
Sleeplessness *	$-.63_l$	1.14	60.25	11.43	1.05	.99
Tendency to dwell on past *	$-.64_l$	1.23	61.03	11.19	2.00	1.03
Ability to concentrate	$-.64_l$	1.15	63.50	11.22	1.53	.78
Ability to learn new things	$-.66_{l-1}$	1.24	60.23	10.89	1.73	.92
Psychological well-being	$-.72_l$	.97	67.95	10.02	1.50	1.19
Speech ability	$-.74_l$	.74	75.15	7.12	1.24	1.20
Remember long past events	$-.74_l$	1.26	65.79	11.77	1.26	1.27
Personal hygiene	$-.75_l$	.96	72.00	7.19	2.20	1.28
Tolerance of new ideas	$-.77_l$	1.34	58.21	11.21	2.77	.93
Fatigue *	$-.79_l$	1.82	60.38	11.37	2.08	1.30
Boredom *	$-.79_l$	1.34	63.86	8.95	2.59	1.23
Proneness to minor accidents *	$-.85_l$	1.35	67.14	9.35	1.47	.79
Ability to use public transit	$-.87_{l-1}$	1.11	70.00	10.59	1.83	1.03
Ability to prepare meals	-1.00_{l-1}	.78	73.86	8.41	1.55	1.19
Anxiety about future *	-1.02_{l-1}	1.32	61.30	12.22	1.78	1.01
Tendency to repeat self *	-1.04_{l-1}	1.28	67.84	8.56	1.27	1.02
Adaptability	-1.06_{l-1}	1.13	61.04	9.51	1.85	1.01
Deal effectively with others	-1.08_l	1.00	64.29	9.91	1.74	.96
Problem-solving ability	-1.15_{l-1}	.82	63.41	10.77	1.45	.95
Mental alertness	-1.15_{l-1}	1.10	66.08	8.74	1.24	1.11
Ability to handle finances	-1.15_l	.93	69.75	8.32	1.53	.99

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Susceptibility to depression *	-1.15_{t-1}	1.34	60.80	13.68	1.78	1.11
Physical exercise	-1.17_{t-1}	1.53	58.04	11.67	2.76	1.18
Emotional dependence *	-1.19_{t-1}	1.16	63.83	9.22	1.68	.98
Loneliness *	-1.19_{t-1}	1.53	68.00	9.26	2.04	1.26
Remember everyday tasks	-1.19_{t-1}	1.09	67.23	10.77	1.55	1.04
Ability to do necessary tasks	-1.28_{t-1}	.66	69.39	8.01	1.78	1.10
Housekeeping	-1.28_{t-1}	.84	70.64	7.34	1.43	1.16
Recovery from illnesses	-1.32_{t-1}	1.28	60.00	10.92	1.58	1.17
Home maintenance	-1.38_{t-1}	.97	67.14	9.13	1.45	1.08
Worry physical problems *	-1.38_{t-1}	1.13	59.80	9.79	2.06	.82
Fear of being alone *	-1.40_{t-1}	1.41	66.67	9.73	1.84	1.16
Ability to work	-1.42_{t-1}	1.23	65.00	9.09	1.68	1.15
Physical dependence *	-1.42_{t-1}	1.38	71.32	8.10	1.58	1.26
Minor illnesses *	-1.43_{t-1}	1.05	63.27	8.57	1.38	1.12
Visual ability	-1.49_{t-1}	.89	63.14	10.68	.67	1.11
Hearing	-1.49_{t-1}	1.07	65.69	6.71	1.04	1.25
Remember names, numbers	-1.53_{t-1}	.97	64.08	9.56	1.20	1.08
General health	-1.57_{t-1}	.82	65.38	9.59	1.75	1.31
Physical coordination	-1.60_{t-1}	.93	65.09	11.03	1.47	1.12
Minor aches and pains *	-1.65_{t-1}	1.15	58.65	11.03	1.54	1.24
Driving competence	-1.85_{t-1}	.93	67.69	8.07	1.48	1.20
Reaction time	-1.94_{t-1}	1.08	63.65	9.71	1.21	1.32
Physical strength	-2.13_{t-1}	.76	62.45	8.75	1.60	1.12
Average Woman target: Overall Average	-1.03	1.14	64.95	9.80	1.66	1.09

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Average Man target (n = 54)						
Family contact	$.70_g$	1.51	68.64	9.05	2.68	.88
Hobbies/recreation	$.46_s$	1.71				
Sleeplessness *	$-.04_s$	1.36				
Proneness to minor accidents *	$-.24_s$	1.40				
Tendency to be angry/upset *	$-.26_s$	1.15				
Ability to communicate needs	$-.30_s$	1.16				
Follow medical instructions	$-.31_s$	1.15				
Self-esteem	$-.44_l$	1.02	66.36	9.94	2.24	.87
Good judgment	$-.48_l$	1.21	70.83	9.96	1.69	1.31
Fatigue *	$-.54_s$	1.71				
Boredom *	$-.57_l$	1.49	66.43	8.50	2.67	1.00
Belief in competence	$-.59_l$	1.09	67.89	9.05	2.26	.92
Ability to use public transit	$-.63_{l-1}$	1.00	69.75	8.62	1.53	1.06
Tendency to dwell on past *	$-.70_l$	1.25	62.89	10.58	2.07	.99
Personal hygiene	$-.72_l$	.92	68.89	10.90	2.14	1.10
Loneliness *	$-.74_{l-1}$	1.71	70.96	9.13	1.98	1.15
Deal effectively with others	$-.74_l$	1.10	68.11	11.01	1.68	1.23
Anxiety about future *	$-.76_{l-1}$	1.30	64.52	12.34	2.10	.88
Susceptibility to depression *	$-.78_{l-1}$	1.38	65.96	10.35	2.02	1.03
Speech ability	$-.78_l$	.95	73.24	9.76	1.24	1.10
Problem-solving ability	$-.83_{l-1}$	1.19	65.23	11.51	1.45	.95
Ability to concentrate	$-.83_l$	.91	65.12	9.85	1.30	.91
Tendency to repeat self *	$-.87_{l-1}$	1.20	68.72	10.13	1.40	1.10
Psychological well-being	$-.91_l$	1.01	72.50	10.56	1.45	1.30
Remember long past events	$-.96_l$	1.27	70.73	9.05	1.32	1.19
Emotional dependence *	-1.00_{l-1}	1.30	66.12	9.96	1.53	.68
Ability to handle finances	-1.00_l	.89	72.63	7.24	1.39	1.00
Ability to prepare meals	-1.07_{l-1}	.93	74.39	9.76	1.41	1.05
Physical dependence *	-1.09_{l-1}	1.58	73.02	7.99	1.53	1.10

(table continues)

Items	Degree of Change		Age of Change		Degree of Influence	
	M	SD	M	SD	M	SD
Housekeeping	-1.17_{l-l}	.77	70.89	7.63	1.57	.97
Ability to learn new things	-1.17_{l-l}	1.09	65.33	9.68	1.49	.99
Tolerance of new ideas	-1.17_{l}	1.24	60.43	10.42	2.32	.98
Home maintenance	-1.24_{l-l}	.89	68.89	9.10	1.38	1.01
Fear of being alone *	-1.24_{l-l}	1.40	68.72	9.92	2.00	1.12
Ability to do necessary tasks	-1.26_{l-l}	.81	71.06	7.59	1.51	.98
Adaptability	-1.30_{l-l}	1.10	65.56	8.67	2.09	1.00
Minor illnesses *	-1.33_{l-l}	1.40	66.42	9.22	1.21	1.06
Mental alertness	-1.33_{l-l}	.87	67.92	9.27	1.11	1.10
Worry physical problems *	-1.33_{l-l}	1.32	60.96	11.42	2.06	1.00
Remember everyday tasks	-1.41_{l-l}	.92	69.44	9.40	1.35	1.08
Ability to work	-1.41_{l-l}	1.11	68.00	8.08	1.60	1.14
Minor aches and pains *	-1.52_{l-l}	1.40	61.85	11.67	1.39	1.14
Physical coordination	-1.57_{l-l}	.88	67.60	10.01	1.34	1.15
Driving competence	-1.57_{l-l}	.96	70.39	6.92	1.37	1.25
Recovery from illnesses	-1.61_{l-l}	1.19	63.96	10.07	1.38	1.18
Physical exercise	-1.63_{l-l}	1.17	62.22	9.45	2.44	1.14
Remember names, numbers	-1.63_{l-l}	1.00	67.25	10.41	1.20	1.08
General health	-1.65_{l-l}	.78	68.11	9.42	1.68	1.22
Visual ability	-1.78_{l-l}	.77	65.47	11.19	.94	1.25
Physical strength	-1.87_{l-l}	.70	65.38	10.56	1.62	1.12
Hearing	-1.91_{l-l}	.81	66.79	8.94	.98	1.22
Reaction time	-1.94_{l-l}	.96	67.55	10.72	1.23	1.20
Average Man target: Overall Average	-0.98	1.14	67.55	9.67	1.61	1.07

Note: Subscript g = theory of gain item; subscript s = theory of stability item ; subscript l = theory of loss item, subscript l - l = theory of loss item for all targets.

* Reverse-scored.

Man, α = .86. To assess the degree of inter-form consensus, Spearman rank correlations were computed across the mean ratings of change for each of the 52 items, within each form, as follows: Mother, Father, r = .90, p = .000; Mother, Woman, r = .91, p = .000; Mother, Average Man, r = .86, p = .000; Father, Average Woman, r = .89, p = .000; Father, Average Man, r = .89, p = .000; Average Man, Average Woman, r = .87, p = .000. Fisher's z tests indicated no significant differences between item rankings for any combination of target pairs. Thus, there were high levels of both within-group and between-group consensus as to the direction and relative ranking of change across items.

Developmental change versus stability.

There was no significant overall effect of order of presentation for average change ratings on the ITAQ, F (1, 213) = 0.77, p = .381. Mean ratings of developmental change for each of the four target forms were as follows: Mother, M = - 0.59; Father, M = - 0.62; Average Woman, M = - 1.04; Average Man, M = -0.97. For all targets, mean change scores were negative, and the majority of items were assigned negative average change scores. Consistent with the findings of Study 1, respondents anticipated more overall developmental loss than gain for both parents and generalized adults.

Effects of target on ratings of developmental change.

A one way analysis of variance (ANOVA) revealed a significant overall effect of target for the average degree of expected change, across items, F (3) = 20.19, p = .000; η^2, as generalized by r^2 = .22. A simple means analysis indicated that average change ratings for both the Mother and Father targets were significantly greater than those obtained for either the Average Man or Average Woman target. As was found in the

first study, respondents predicted, on average, significantly less overall developmental decline for parents than for the generalized adults (see Figure 2).

The method used to classify items as theory of loss, gain, or stability was the same as that employed in Study 1. That is, paired samples t-tests ($\alpha = .01$) were performed on each item mean, for each target group, to classify items as theory of loss when the mean score on the item was significantly less than 0, as theory of gain when the mean score was significantly greater than 0, and as theory of stability when the mean did not differ significantly from 0. Gain, loss, and stability items are noted in Table 7 with subscripts g, l, and s, respectively. Theory of loss items that were common to the four target forms are indicated by l - l. There were no theory of gain or theory of stability items common to all targets.

Chi-square (χ^2) comparisons were used to examine target form differences in the proportion of items classified as either loss or gain, versus stability: Mother, 69%; Father, 67%; Average Woman, 94%; Average Man, 87%. The difference between the Mother form and the Father form did not reach significance, χ^2 (1, 52) = .06, $p > .05$, nor did the difference between the Average Woman form and the Average Man form, χ^2 (1, $N = 52$) = 1.44, $p > .05$. However, a significantly greater proportion of items were endorsed as change-sensitive for the Average Woman target than for either the Mother target, χ^2 (1, 52) = 11.02, $p < .001$, or Father target, χ^2 (1, 52) = 12.33, $p < .001$. As well, there were significantly more change-sensitive items for the Average Man target than for either the Mother target, χ^2 (1, 52) = 4.90, $p < .05$, or Father target, χ^2 (1, 52) = 5.88, $p < .025$. The results obtained here clearly mirrored those of the first study: Both

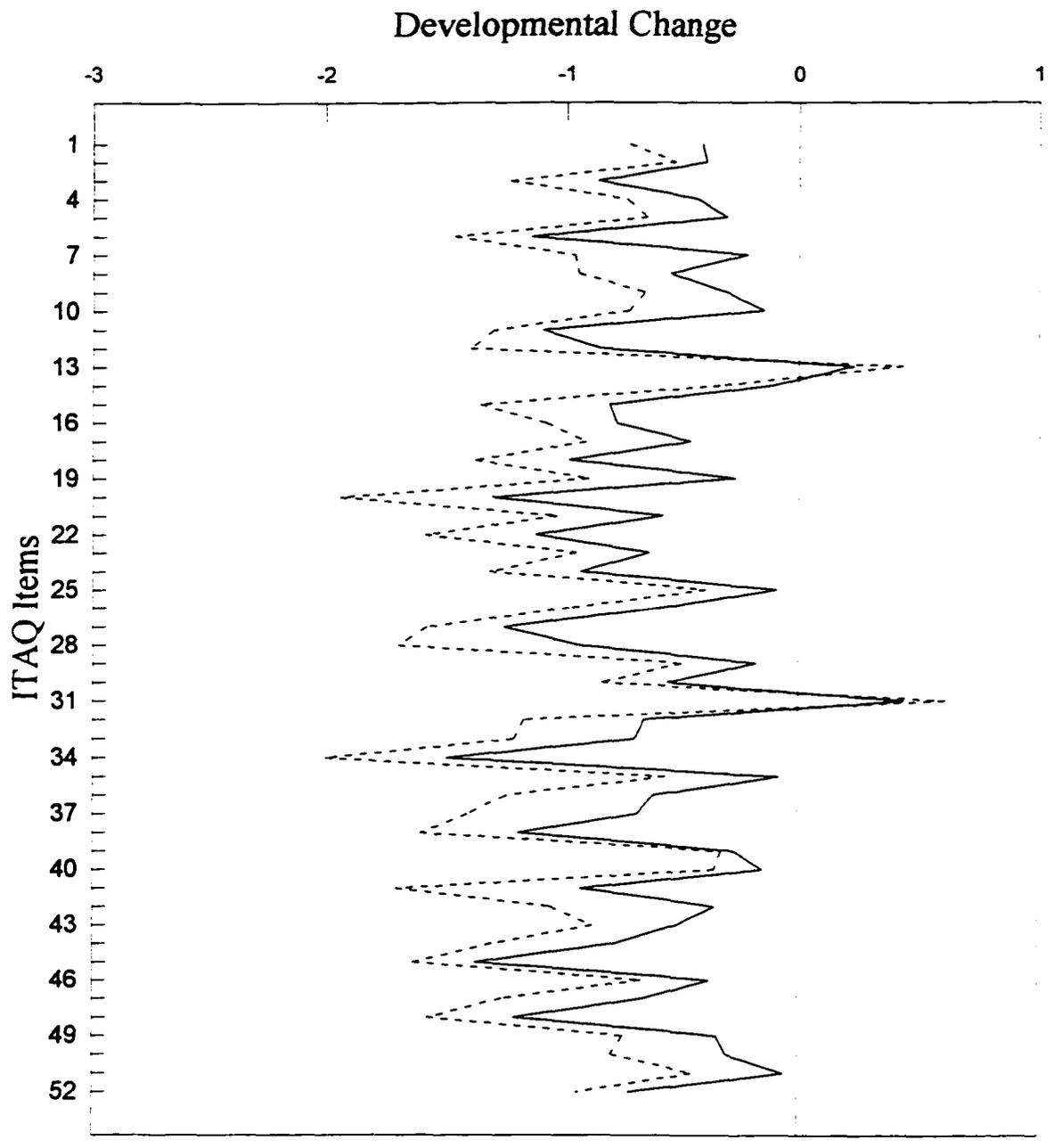

Figure 2. Average Change Ratings for Parents vs. Generalized Adults: Study 2

of the parent targets were generally expected to change, as they grow older, across a significantly smaller range of attributes or abilities than either of the generalized adult targets.

At the same time, 31 (60%) of the 52 items were classified as theory of loss items for all four target forms. Similar to the findings of Study 1, respondents expected parents and generalized adults to undergo many of the same kinds of developmental losses with increasing age. The results of a one way ANOVA showed a significant overall effect of target for average change scores across the 31 shared theory of loss items, $\underline{F}$ (3, 211) = 19.28, $\underline{p}$ = .000, $\underline{r}^2$ = .22. A simple means analysis revealed that respondents who rated either the Average Woman or Average Man target predicted, on average, a greater degree of overall developmental decline than those who rated either the Mother or Father target: Average Woman, $\underline{M}$ = -1.35; Average Man, $\underline{M}$ = -1.31; Mother, $\underline{M}$ = -0.87; Father, $\underline{M}$ = -0.87. The results were again consistent with those of the first study. Across 31 attributes or abilities for which developmental loss was anticipated for all target individuals, parents were expected to undergo significantly less severe decline than either of the generalized adults.

Age of change onset and degree of influence.

Only items classified as theory of loss or theory of gain were used to examine respondents' beliefs about the timing and modifiability of developmental change in the four target individuals. The mean estimated age of change onset across change-sensitive items for each target form were as follows: Mother, $\underline{M}$ = 64.15; Father, $\underline{M}$ = 66.23; Average Woman, $\underline{M}$ = 64.94; Average Man, $\underline{M}$ = 67.63. Thus, consistent with the

results of Study 1, both parents and generalized adults, most predicted changes were expected to occur, on average, in the age range of the mid-60s.

Mean ratings of perceived influence over change across change-sensitive items for each form were as follows: Mother, M = 1.55; Father, M = 1.40; Average Woman, M = 1.67; Average Man, M = 1.65. All targets were assigned average scores greater than 1 (the value on the rating scale labeled a little). As was found in the first study, respondents indicated that both parents and generalized adults have some potential ability to influence (i.e., either hinder or facilitate) most aging-related declines.

Effects of target on age of change onset and degree of influence.

Separate one way ANOVAs were used to examine the effects of target on the mean age of change onset and the mean level of perceived influence over change for the 31 loss items common to all target forms. There was a slight but significant overall effect of target for the mean age of change onset, $F(3, 202) = 2.74$, $p = .045$, $r^2 = .04$. A simple means analysis showed that the Average Man target was thought to undergo expected declines at a later average age than the Mother target: Mother, M = 63.65; Father, M = 65.61; Average Woman, M = 64.81; Average Man, M = 67.07. This finding stands in partial contrast to that obtained in Study 1, in which there was no significant overall effect of target for the age of change onset.

There was no significant overall effect of target for the degree of perceived influence over change ($F = 1.30$, $p = .276$): Mother, M = 1.53; Father, M = 1.37; Average Woman, M = 1.59; Average Man, M = 1.55. As was found in the first study, respondents indicated that parents as well as generalized adults have some potential

ability to hinder or facilitate most aging-related changes. However, whereas respondents in the present study perceived that all target individuals have roughly the same level of influence over change, those in the first study assigned to the Average Man target significantly higher ratings of influence than to the others.

Interrelationships among belief components.

Zero-order correlations were computed for mean ratings of change, age of change onset, and perceived influence for loss items common to all target forms. There was no significant correlation between mean item ratings of change and the mean age of onset for any of the target forms: Mother, $r = .00$, $p = .995$; Father, $r = .24$, $p = .169$; Average Woman, $r = .02$, $p = .870$; Average Man, $r = .23$, $p = .136$. Consistent with the findings of Study 1, there was no apparent association between the severity of expected decline and the age at which it was thought to occur.

There were significant positive correlations between the mean item ratings of change and the mean ratings of perceived influence over change, for all target forms. Individuals indicated that parents and generalized adults have more potential influence over relatively moderate losses than more extreme losses. As well, there were significant negative correlations between the mean item ratings of perceived influence over change and the mean age of change onset, for all target forms. Parents and generalized adults were perceived as having a greater ability to influence aging-related declines that begin at relatively earlier ages than those occurring at later ages. In the first study, although similar results were obtained for both parent targets and the Average Woman, the correlation was nonsignificant for the Average Man target form.

Hierarchical regression analyses were used to determine if knowing the average age of change onset associated with loss items improved prediction of ratings of perceived influence beyond that afforded by the degree of change expected. Analyses were done using SPSS-PC REGRESSION, as well as SPSS-PC EXPLORE in evaluation of assumptions. As in the first study, order of entry for IVs was based on the logical sequence of questions pertaining to each item in the ITAQ (i.e., degree of change, age of change onset, perceived influence over change, respectively).

Table 8 displays the correlations between variables, the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β), the semipartial correlations (sr^2), and R, R^2, and adjusted R^2 after entry of the IV(s). The R was significantly different from zero at the end of each step for each of the hierarchical regressions. After step 1, with degree of change in the equation, the values of R^2 for each target form were as follows: Mother, $R^2 = .17$, F_{inc} (1, 33) = 6.65, $p = .015$; Father, $R^2 = .15$, F_{inc} (1, 33) = 5.75, $p = .022$; Average Woman, $R^2 = .09$, F_{inc} (1, 46) = 4.54, $p = .039$; Average Man, $R^2 = .21$, F_{inc} (1, 42) = 11.07, $p = .002$. After step 2, with age of change onset added to prediction of ratings of influence by degree of change, the values of R^2 for each target form were as follows: Mother, $R^2 = .57$, F_{inc} (2, 32) = 30.45, $p < .001$; Father, $R^2 = .50$, F_{inc} (2, 32) = 22.12, $p < .001$; Average Woman, $R^2 = .17$, F_{inc} (2, 45) = 4.28, $p < .05$; Average Man, $R^2 = .42$, F_{inc} (2, 41) = 14.71, $p < .001$. Addition of age of change onset resulted in a significant increment in R^2 for all target forms. On the whole, the results of the hierarchical regression analyses in the present study were consistent with those obtained in Study 1.

Table 8

Summary of Hierarchical Regression Analyses for Variables Predicting Perceived Influence over Developmental Losses: Study 2

Mother target (n = 35)					
Variables	Perceived Influence (DV)	Degree of Change	B	ß	sr^2 (incremental)
Degree of Change	.41		0.637	0.41	.17**
Age of Change Onset	-.64	.00	-0.078	-0.64	.41***
Father target (n = 35)					
Variables	Perceived Influence (DV)	Degree of Change	B	ß	sr^2 (unique)
Degree of Change	.39		0.741	0.53	.15*
Age of Change Onset	-.48	.24	-0.070	-0.61	.35***
Average Woman target (n = 48)					
Variables	Perceived Influence (DV)	Degree of Change	B	ß	sr^2 (incremental)
Degree of Change	.30		0.315	0.31	.09*
Age of Change Onset	-.27	.02	-0.028	-0.28	.08*
Average Man target (n = 44)					
Variables	Perceived Influence (DV)	Degree of Change	B	ß	sr^2 (incremental)
Degree of Change	.46		0.563	0.56	.21***
Age of Change Onset	-.34	.23	-0.058	-0.47	.21***

* $p < .05$. ** $p < .01$. *** $p < .001$

Respondent variables.

Correlations showed that several respondent variables were significantly related to individuals' average ratings of change, but, as found also in Study 1, specific correlated variables differed by target form. Furthermore, the set of correlated variables found for each target form in the present investigation differed from those observed in the first study. Using SPSS-PC REGRESSION, separate standard regression analyses were performed for each target form using average change scores as the dependent variable and correlated respondent variables as independent variables. Table 9 displays the correlations between variables, the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β), the semipartial correlations (sr^2) and R, R^2, and adjusted R^2.

The R for regression of average change scores for the Mother target was significantly different from zero, F (2, 50) = 6.70, p = .003. Both mother's health (as compared to a perfect state of health) and the father-child relationship contributed significantly to prediction of change ratings (sr^2 = .13, sr^2 = .14, respectively). The closer the reported father-daughter relationship and the better the mother's perceived health, the less overall decline was predicted for the Mother target. Altogether, 21% (18% adjusted) of the variability in change ratings was predicted by knowing scores on these two independent variables.

The R for regression of change ratings for the Father target was also significantly different from zero, F (4, 47) = 6.78, p = .000. Results indicated that subjective ratings of one's own health status (as compared to others the same age), father's occupational

Table 9

Summary of Simultaneous Multiple Regression Analyses for Demographic Variables Predicting Mean Ratings of Change: Study 2

Mother target (n = 53)

Variables	Avg. Change (DV)	Mother's Health vs. Perfect	B	ß	sr^2 (unique)
Mother's Health vs. Perfect	-.35		-0.171**	-0.36	.13
Father-child Relationsip	-.29	-.03	-0.126*	-0.30	.14
			Intercept	= 0.008	
			R^2	= .21	
			Adj. R^2	= .18	
			R	= .46**	

Father target (n =52)

Variables	Avg. Change (DV)	Subject's Health vs. Others	Father's Educ.	Father's Occ. Status	B	ß	sr^2 (unique)
Subject's Health vs. Others	.35				0.219**	.38	.14
Father's Educ	.28	.03			-0.008	-.07	
Father's Occ. Status	.43	.04	.67		0.149*	.35	.07
Father's Health vs. Perfect	-.35	.12	-.36	-.36	0.117*	-.29	.07
					Intercept	= -.984	
					R^2	= .37	
					Adj. R^2	= .31	
					R	= .60***	

(table continues)

Average Woman target (n =45)

Variables	Avg. Change (DV)	Subject's Educ.	Father's Educ.	Father's Occ. Status	B	ß	sr^2 (unique)
Subject's Educ.	.47				0.122**	0.37	.12
Father's Educ.	.45	.23			0.036	0.30	
Father's Occ. Status	.37	.33	.64		0.042	0.10	
Mother's Perc. Age Category	.21	-.03	.00	-.19	0.302	0.24	
					Intercept	= -3.937	
					R^2	= .39	
					Adj. R^2	= .34	
					R	= .63***	

Average Man target (n = 50)

Variable	Avg. Change (DV)	B	ß	sr^2 (unique)
Father's Health vs. Perfect	-.36	-0.150**	-0.36	
		Intercept	= -0.634	
		R^2	= .13	
		Adj. R^2	= .11	
		R	= .36**	

* p < .05. ** p < .01. *** p < .001

status (i.e., unskilled to professional), and subjective perceptions of paternal health (as compared to a perfect state of health) were significant predictors of average change scores for the Father target (sr^2 = .14, sr^2 = .07, sr^2 =.07, respectively). The better the father's perceived health status and the higher the father's occupational status, the less aging-related decline was predicted for the Father target. In contrast, poorer subjective health ratings for oneself were associated with predictions of greater decline in one's father. The failure of father's educational level to contribute significantly to the equation was probably due to the high correlation between it and father's occupational status (r = .67). Together,

37% (31% adjusted) of the variability was predicted by knowing scores on these four respondent variables.

Four respondent variables were entered into the regression equation for the Average Woman form, for which the R for regression was significant, F (4,40) = 6.65, p = .000. Only respondent's educational level contributed significantly to prediction of average change scores (sr^2 = .12). Fewer years of formal education were associated with respondents' predictions of greater overall decline for the average woman. Neither father's education level, father's occupation, nor mother's perceived age identity contributed significantly to the equation. Altogether, knowing scores on these four respondent variables contributed 39% (34% adjusted) to prediction of average change scores.

Subjective ratings of father's health status (as compared to a perfect state of health) were a significant predictor of change ratings for the Average Man target. The better the father's perceived health status, the less overall decline was predicted for the average man. The R for regression was significantly different from zero, F (1, 48) = 7.18, p = .010. Knowing father's perceived health status contributed 13% (11% adjusted) to the variability in average change scores.

Correlational analyses were performed to examine the relationship between implicit theories of change and perceptions of health-related impairment in parental functioning, for those individuals who reported having a parent with a current health problem requiring medical treatment. As displayed in Table 10, zero-order correlations were computed between individuals' average change scores and the degree to which they

Table 10

Relationship Between Degree to Which Parental Health Problems are Perceived to Interfere with Functioning, and Mean Ratings of Change: Study 2

		Degree of Interference		Degree of Change			
	n	M	SD	M	SD	r	p
Mother target							
Mother with health problems requiring medical treatment	11	2.18	.60	-.58	.44	.21	ns
Father with health problems requiring medical treatment	16	2.31	.95	-.61	.32	-.07	ns
Father target							
Mother with health problems requiring medical treatment	13	2.42	.79	-.67	.36	.12	ns
Father with health problems requiring medical treatment	17	2.18	.88	-.69	.41	-.27	ns
Average Woman target							
Mother with health problems requiring medical treatment	9	2.78	.97	-.96	.44	.37	ns
Father with health problems requiring medical treatment	10	1.50	.53	-1.12	.52	-.37	ns
Average Man target							
Mother with health problems requiring medical treatment	14	2.29	1.07	-.90	.41	.46	ns
Father with health problems requiring medical treatment	13	2.08	.64	-1.00	.38	-.49	ns

perceive the parent's health problem(s) as interfering with their everyday functioning. None of the obtained correlations were significant for any of the target forms in the present study. These findings are generally consistent with those of the first study, in which only one significant correlation was found between perceived change and impairment (i.e., for the Mother target form).

Factor analysis.

Separate, initial principal components extractions (without rotation) were performed through SPSS-PC Factor Analysis on ratings of change for the parent target forms (Mother and Father combined) and the generalized adult forms (Average Woman and Average Man combined) across both studies. This was done to compare the factor structures of change ratings for parent versus adult targets. Outliers within each item distribution were identified through SPSS-PC EXPLORE, and were modified to the next most extreme score. Missing data were estimated by substituting form means.

Sixteen factors were extracted for the parent forms as well as for the adult forms, as indicated by an eigenvalue greater than 1.00. The 16 factors accounted for 64% of the total variance in the parent forms and 63% of the variance in the adult forms. There were highly similar item loadings on the first four factors for each group, and scree plots indicated nearly identical factor profiles. Thus, data from the four forms and across both studies were combined for further exploratory analysis.

Four factors were extracted by principal components extraction with varimax rotation. Loadings of items on factors, communalities, and percents of variance and covariance are shown in Table 11. As indicated by low communality values, variables were not particularly well-defined. With a cut of .40 for inclusion of a variable in interpretation of a factor, 13 of the 52 items did not load on any factor. The failure of numerous items to load on a factor reflects the heterogeneity of items on the ITAQ. Orthogonal rotation was retained because of its conceptual simplicity and ease of description (Tabachnick & Fidell, 1989).

Table 11

Factor Loadings, Communalities (H^2), Percents of Variance and Covariance for Principal Components Extraction and Varimax Rotation on ITAQ Items: Study 1 and Study 2

Items	F_1[a]	F_2	F_3	F_4	h^2
Ability to perform necessary everyday tasks outside of the home	.66	.00	.00	.00	.48
Ability to perform simple home maintenance tasks	.63	.00	.00	.00	.42
Ability to work outside the home if necessary	.62	.00	.00	.00	.41
Physical strength	.62	.00	.00	.00	.48
Physical coordination	.60	.00	.00	.00	.41
Reaction time	.60	.00	.00	.00	.44
General health	.58	.00	.00	.00	.40
Ability to perform simple housekeeping chores	.57	.00	.00	.00	.42
Ability to look after one's own finances	.57	.00	.00	.00	.42
Visual ability	.57	.00	.00	.00	.39
Competence in driving	.54	.00	.00	.00	.36
Ability to prepare own meals	.53	.00	.00	.00	.41
Hearing ability	.49	.00	.00	.00	.36
Ability to remember everyday tasks or obligations	.48	.00	.00	.00	.27
Ability to recover quickly from minor illnesses	.46	.00	.00	.00	.22
Ability to remember a name or phone number	.46	.00	.00	.00	.36
Speech ability	.45	.00	.00	.00	.31
Belief in one's own competence to manage own affairs	.00	.00	.00	.00	.29
Personal hygiene	.00	.00	.00	.00	.30
Mental alertness	.00	.00	.00	.00	.23
Ability to deal effectively with tradespeople, salesclerks, landlords, etc.	.00	.00	.00	.00	.32
Ability to use public transit	.00	.00	.00	.00	.22
Ability to remember news events of 10 years ago	.00	.00	.00	.00	.16

(table continues)

Items	F_1[a]	F_2	F_3	F_4	h^2
Fear of being alone	.00	.63	.00	.00	.45
Susceptibility to depression	.00	.62	.00	.00	.45
Loneliness	.00	.57	.00	.00	.34
Anxiety about the future	.00	.56	.00	.00	.35
Boredom	.00	.54	.00	.00	.33
Tendency to become angry or upset	.00	.52	.00	.00	.31
Tendency to dwell on past mistakes or misfortunes	.00	.49	.00	.00	.28
Emotional dependence on others	.00	.48	.00	.00	.27
Tendency to worry about physical problems	.00	.47	.00	.00	.32
Susceptibility to minor illnesses	.00	.41	.00	.00	.36
Physical dependence on others	.00	.00	.00	.00	.32
Sleeplessness	.00	.00	.00	.00	.12
Adaptability	.00	.00	.59	.00	.49
Ability to learn new things	.00	.00	.53	.00	.45
Psychological well-being	.00	.00	.51	.00	.37
Good judgment	.00	.00	.51	.00	.38
Problem-solving abilities	.00	.00	.48	.00	.40
Tolerance of different lifestyles and ideas	.00	.00	.45	.00	.25
Self-esteem	.00	.00	.43	.00	.35
Participation in hobbies or recreational activities	.00	.00	.40	.00	.21
Contact with family	.00	.00	.00	.00	.17
Frequency of physical exercise	.00	.00	.00	.00	.21
Ability to follow medical instructions	.00	.00	.00	.00	.28
Ability to communicate needs and wants	.00	.00	.00	.00	.17
Proneness to minor accidents in the home	.00	.00	.00	.58	.39
Fatigue	.00	.00	.00	.53	.37

(table continues)

Items	F_1[a]	F_2	F_3	F_4	h^2
Minor aches and pains	.00	.00	.00	.51	.45
Ability to concentrate on simple tasks	.00	.00	.00	-.43	.32
Tendency to repeat oneself in conversation	.00	.00	.00	.00	.33
Percent of variance	19.80	6.60	4.40	3.10	
Percent of covariance	.58	.20	.13	.09	

[a] Factor labels:

F_1 Optimal general functioning

F_2 Impaired psychosocial functioning

F_3 Optimal psychosocial functioning

F_4 Impaired general functioning

Items as displayed in Table 11 are ordered and grouped by size of loadings to facilitate interpretation. Loadings under .40 (16% of the variance) are replaced by zeros. Suggested interpretive labels for each factor (shown in footnotes of Table 11) are as follows: (a) Optimal General Functioning, (b) Impaired Psychosocial Functioning, (c) Optimal Psychosocial Functioning, and (d) Impaired General Functioning.

Factor scores.

Separate one way ANOVAs were performed on factor scores (comprising only those items with factor loadings greater than .40) to examine effects of target for each identified factor. Results indicated a significant overall effect of target on average ratings of change for all four factors: Optimal General Functioning, $F(3) = 26.99$, $p = .000$, η^2, as generalized by $r^2 = .17$;

Impaired Psychosocial Functioning, F (3) = 14.18, p = .000, r^2 = .09; Optimal Psychosocial Functioning, F (3) = 14.46, p = .000, r^2 = .09; Impaired General Functioning, F (3) = 4.72, p = .003, r^2 = .03.

All but one of the items with loadings over .40 on the second and fourth factors (i.e., Impaired General Functioning, Impaired Psychosocial Functioning) were reverse-scored items. Thus, for all factors, greater factor scores were interpreted as generally denoting fewer developmental losses than smaller factor scores. Both the Mother and Father targets were associated with significantly greater factor scores than either the Average Woman or Average Man target, on all four identified factors. Individuals predicted that, as compared to generalized adults of either sex, parents will undergo fewer aging-related decreases on aspects of optimal general and psychosocial functioning and fewer aging-related increases in aspects of impaired general and psychosocial functioning.

Knowledge of aging.

There were no significant effects of order of presentation for either correct or incorrect scores on the FAQ1: Correct, F (1, 211) = .18, p = .671; Incorrect, F(1, 211) = .18, p = .668. Respondents answered an average of 13 (52%) of the 25 questions on the FAQ1 correctly, 6 (24%) incorrectly, and indicated don't know to an average of 6 (24%) statements.

Palmore (1988) distinguished between misconceptions, which refer to falsely held beliefs and are indicated by wrong answers, and ignorance, which is assumed by the endorsement of don't know responses. Applying that definition, frequent

misconceptions refers here to those items that more than 50% of respondents indicated wrong answers. This sample of undergraduates expressed only two frequent misconceptions, which pertained to the proportion of the population over the age of 65 years and to the priority given to older adults by the medical profession.

There was no significant correlation between average ratings of developmental change and the number of incorrect responses on the FAQ1, for any of the target forms: Mother, $r = -.24$, $p = .082$; Father, $r = .00$; Average Woman, $r = -.18$, $p = .190$; Average Man, $r = -.10$, $p = .486$. Correlations between ratings of change and the number of correct responses were also nonsignificant: Mother, $r = .05$, $p = .694$; Father, $r = .09$, $p = .519$; Average Woman, $r = .09$, $p = .522$; Average Man, $r = .17$, $p = .214$. Thus, neither misconceptions nor valid knowledge about the aged was related to developmental beliefs about aging-related change.

General Discussion

The present research was an investigation of how normative conceptions of aging may be reflected in adult children's expectations of change in their parents' everyday functioning as they grow older. Consistent with findings from previous research (e.g., Heckhausen, Dixon, & Baltes, 1989; Heckhausen & Baltes, 1991; Williams, Denney, & Schadler, 1983), results from both of the present studies showed that people share highly similar, multidimensional notions of change versus stability, which differ among various attributes and abilities in terms of timing, relative degree, and modifiability. At the same time, there was clear and consistent evidence of a strong optimistic bias in adult children's expectations of aging-related change for their parents:

Mothers and fathers were typically expected to undergo considerably fewer and much more moderate declines in functioning than the average man or woman. Thus, developmental profiles for parents seemed to comprise similar but highly blunted predictions of change derived from a generic blueprint of aging.

The considerable degree of similarity observed between change predictions for parents and change predictions for generalized targets seemed surprising given the expert knowledge that most adult children have about their parents' unique characteristics, abilities, health status, and lifestyle. If normative conceptions of aging were to vary as a function of individuating information, much greater within-target-group variability might be expected for parent targets than for generalized adult targets; yet this was not found. How to account for a such a pronounced but uniform positive bias toward parents as compared to the average adult?

One possible explanation is that the optimistic slant simply reflects an overall person-positivity bias, whereby an individual is evaluated positively even though negative stereotypes are held about the group. Sears (1983) argued that because perceived similarity increases liking, individual persons should receive more favorable evaluations than less personal attitude objects, such as aggregated versions of the same persons. According to this view, more favorable evaluations of a specific as opposed to generalized target are the function of more positive feelings toward it. Thus, to the extent that more optimistic predictions of aging-related change constitute more favorable evaluations, people might be more likely to predict less decline in any individual target relative to a generalized target. By the same token, however, this

model also logically predicts that more favorable evaluations of specific targets (i.e., more optimistic expectations) would be associated with increasingly positive feelings towards them. In the present research, no consistent relationship was found between developmental expectations and commonly used indicators of the parent-child bond, such as subjective ratings of the parent-child relationship, frequency of contact with the parent, or geographical distance from him or her.

Alternatively, a motivational explanation might be used to account for an optimistic bias in favor of parents. Zebrowitz (1990) suggested that perceivers may cognitively organize a target individual's behavior differently as a function of what it affords them (i.e., benefit or harm). According to this perspective, people have a vested interest in what they perceive in the service of self-esteem or identity, or to reduce feelings of threat to security or well-being. Perhaps by moderating normative expectations of aging with respect to their parents, individuals enhance their self-esteem or reduce the psychological threat of their parents' mortality. An optimistic bias in favor of one's parent may be an extension of the positive self-bias, which has been well documented throughout the psychological and sociological literature. Several studies have reported a positive self-bias in implicit theories about developmental change in personality traits (Heckhausen & Krueger, 1993; Krueger & Heckhausen, 1993). An identification of self with parent may be related less to subjective feelings of attachment or closeness, and more to the close proximity of familial roles.

A motivational explanation seems further supported by the youthful bias apparent in respondents' subjective perceptions of parental age identity. On average

across the two studies, mothers and fathers were assigned age identities that were 9 years younger than their average chronological age. The favorable discrepancy between parents' perceived age identity and parents' chronological age seems in line with the youthful bias commonly found in self-perceptions of age identity (e.g., Bultena & Powers, 1978; Kastenbaum, Derbin, Sabatini, & Artt, 1972; Zola, 1962). The youthful self-bias has been found to be correlated with favorable self-evaluations (in terms of functional and health status) versus age peers in the elderly (Bultena & Powers, 1978; Terpstra, Terpstra, Plawecki, & Streeter, 1989). It would be interesting to investigate the relationship between predictions of developmental change for parents and perceived parental age identities. Unfortunately, an adequate examination of this question was precluded in the present research by the restricted age range of respondents.

Although there was a pronounced optimistic bias toward parents with respect to the kinds and severity of developmental change, there were no overall indications that this bias generalized to other belief components of implicit theories. Target effects for the perceived timing and modifiability of change were weak and inconsistent across the two studies. Respondents in the first study indicated roughly the same average age of change onset for all targets, but saw the average man as having more potential ability to influence change than the average woman or one's parents. This pattern of findings was reversed in the second study, where there were no significant overall differences in perceived influence across target individuals, but respondents estimated that the average man would undergo changes at a significantly later mean age than the average woman or one's parents.

In general, both parents and generalized adults were expected to undergo most aging-related changes during their mid-60s. Expected losses with relatively later onset ages (i.e., early 70s) included physical dependence on others, the ability to perform simple housekeeping chores, and the ability to perform necessary everyday tasks. Those thought to occur at earlier ages (i.e., late 50s or early 60s) included a tendency to worry about physical problems, the ability to learn new things, and minor aches and pains.

Results suggested that young adults' shared beliefs about the timing of aging-related declines in everyday functioning may reflect a somewhat distorted perception of social reality. Seccombe and Ishii-Kuntz (1991) cited data from the U.S. Bureau of the Census (1984), which indicated that the percentage of individuals requiring the help of another person in at least one activity of daily living (e.g., dressing, bathing, eating) gradually increases with age, from 8% for those aged 65-74 years, to 22% for those aged 75-84, and to 54% for those aged over 85 years. Thus, although the prevalent perception may be that everyday functioning typically begins to decline in the age range of the late 60s or early 70s, objective evidence indicates that the average adult is unlikely to undergo significant functional declines until well into his or her late 80s.

One wonders, why such a discrepancy? The social role perspective, which emphasizes the social-structural origins of people's stereotypical notions, suggests that perceptions of social groups are influenced by the major social roles they are seen to occupy (Turner & Turner, 1994) as well as social institutions (Greene, Wheatley, & Aldava, 1992). It is interesting to speculate how current social institutions (e.g., the average age of retirement from work roles) may contribute to a widely shared belief that

most functional declines begin shortly after the age at which most older adults leave paid employment. Might the anticipated increase in the mandatory age of retirement in our society lead to a gradual upward shift in the perceived timing of late life change?

Although the vast majority of functional attributes and abilities were seen as declining in old age, respondents optimistically indicated that both parents and generalized adults have some potential ability to influence change severity. These findings parallelled those of Heckhausen and Baltes (1991), who reported that generalized others are thought to have a considerable degree of controllability over changes in personality attributes across adulthood. Participants in the present research generally indicated that all targets have the most relative ability to influence aging-related increases in loneliness, susceptibility to depression, and worry about physical problems, and the least relative ability to affect declines in auditory and visual abilities. The apparent tendency to assign greater influence over what might be considered psychosocial attributes than physiological abilities seems consistent with a common assumption in Western societies that people have more personal control over socio-emotional problems than physical health problems.

The life-span approach holds that a logical organization exists among various belief components of implicit theories of aging. Previous research has shown a link between the perceived desirability of change and the perceived timing of change (Heckhausen, Dixon, & Baltes, 1989; Heckhausen & Krueger, 1993). In the present research, there was no significant association between timing and change severity, for any target. Thus, aging-related losses thought to occur at relatively older ages were not

necessarily considered more (or less) extreme than those associated with younger ages of onset. Instead, judgments of change severity seemed to vary according to specific attributes and abilities.

However, there was, on the whole, a significant positive correlation between perceptions of change severity and perceptions of modifiability, as well as a significant negative relationship between beliefs about timing and perceptions of modifiability. Increasingly severe aging-related losses and losses occurring at relatively older ages were generally considered less subject to personal influence than more moderate changes and those with a relatively earlier age of onset. Taken overall, the results of hierarchical regression analyses strongly suggested that individuals' subjective beliefs about the modifiability of an aging-related decline in functioning may be based on both its perceived severity and the chronological age at which it is thought to begin. The latter finding raises the possibility that judgments of modifiability may be derived in part through attributional processes. There is some evidence that illnesses attributed to the effects of aging (i.e., more likely to occur with increasing age) are considered less preventable and less controllable than those attributed to other causes (e.g., lifestyle factors) (Keller, Leventhal, Prohaska, & Leventhal, 1989). Perhaps losses in functioning associated with very old ages are also more likely to be attributed to aging as opposed to other factors, and more likely therefore to be viewed as inevitable and irreversible.

Further consistent with a life-span perspective on aging, the present findings suggest that individuals' developmental beliefs vary among specific attributes and

abilities. Specific aspects of expected decline were found to be highly consistent, with a total of 28 items being classified as theory of loss items, for all targets, across both studies. For both parents and generalized adults, individuals believe that the greatest aging-related declines occur in physical strength, reaction time, and visual ability, whereas more moderate losses occur through a decrease in problem-solving abilities and an increased susceptibility to depression. Only two items were classified as theory of gain for any target (viz., those pertaining to hobby and recreational activities, and family contact). Across both studies, one's mother, the average woman, and the average man were expected to increase their contact with family as they grow older. Judging from the apparent nature of loss items, it seemed that aging-related declines in essentially physiological attributes may tend to be seen as more severe, less amenable to personal influence, and occurring at older ages than those attributes or abilities that may be viewed as psychosocial in nature.

Although no significant overall effects of target gender or perceiver gender were obtained in either study, several interesting differences were observed in the loss items that distinguished each parent target from the generalized adult of the same sex. For example, aging-related losses predicted for the average woman but not for one's mother (across both studies) included increases in a tendency to dwell on the past and a proneness to minor accidents, as well as decreases in tolerance of new ideas, ability to communicate one's own needs, belief in one's own competence, and personal hygiene. Aging-related losses anticipated for the average man but not for one's father (across both studies) included declines in good judgment, self-esteem, and psychological well-being.

These findings suggest the possibility that there may be some gender-linked differences in the specific aspects of expected change that distinguish predictions of normative change from that of parents.

An ITAQ item analysis was conducted through an exploratory principal components analysis of the combined data across all targets and from both studies. Four factors were identified, which accounted for a total of 34% of the variance in ratings of change. In order of variance accounted for, these factors were labeled as: Optimal general functioning, Impaired psychosocial functioning, Optimal psychosocial functioning, and Impaired general functioning. There were significant effects of target for all four identified components of aging-related change. That is, respondents predicted that, as compared to the average man or woman, one's father or mother would experience more moderate aging-related declines in aspects of optimal general and psychosocial functioning, as well as more moderate increases in aspects of impaired general and psychosocial functioning.

This exploratory item analysis suggested that distinct and meaningful dimensions may underlie people's implicit theories of aging. As interpreted here, the four factors represent two distinct categories of functioning as well as two kinds of developmental loss. For example, the ability to perform various tasks and activities that might be considered essential to independent living (e.g., home maintenance, meal preparation, taking care of personal finances) contributed to a general functioning factor, whereas a psychosocial factor comprised attributes that could be viewed as largely psychological in nature, such as susceptibility to depression, anxiety about the future, and emotional

dependence on others. Two kinds of aging-related loss seemed reflected in separate factors related to increases in existing attributes or abilities versus decreases. Thus, it may be that individuals hold different developmental beliefs with respect to the intensification versus the waning of specific aspects of everyday functioning. To the extent that items contributing to the Optimal Functioning component might be subjectively perceived as desirable, and those contributing to the Impaired Functioning component might be viewed as undesirable, the four-factor interpretation seems in line with previous research. For example, Heckhausen and Krueger (1993) investigated four types of life-span change, a model of categorization based on the assertion that, "[i]ncreases in desirable attributes and decreases in undesirable attributes constitute two different types of gains, [and that] [d]ecreases in desirable attributes and increases in undesirable attributes comprise two different types of losses" (p. 542).

The second study in the present research extended the findings of the first by investigating the relationship between individuals' subjective beliefs about aging and their factual knowledge about the aged as a specific social group as measured by the FAQ1. Contrary to predictions, there was no significant relationship between misconceptions about older adults (as indicated by incorrect responses) and expectations of aging-related change, for any target. This seemed particularly surprising in view of the overlapping content of several items on the two measures (e.g., the physical senses, physical strength, adaptation to change, learning new things, boredom, social isolation, and feelings of irritation or anger).

One interpretation of this finding is that the factual information people possess about old age does not guide their implicit theories of the aging process. It seems possible that implicit theories are derived from different cognitive structures and processes than those associated with knowledge and learning. For example, factual knowledge about being old in our society (e.g., the prevalence of poverty among older persons, the proportion of older adults in the population, or the accident rate of older drivers) might be more likely to be derived from the news media and through formal education, whereas implicit theories of aging-related change may be shaped largely by attributional and inferential processes. The present findings suggest the possibility of a meaningful distinction between factual information about old age and developmental beliefs about aging-related change.

An alternative explanation involves a potentially important methodological difference between the two measures, which may have itself contributed to the low correlation found between them. Whereas the FAQ1 requires respondents, on the whole, to assess the objective accuracy of group-level generalizations (e.g., old people), the ITAQ asks individuals to describe their subjective perceptions of change across late adulthood. Thus, the task requirements are quite different. There is some evidence that individuals may offer inconsistent or even contradictory responses as a function of question format. For example, Schonfield (1982) asked older and younger respondents to decide the truth or falsity of ten statements (considered mythical) about the elderly in general. After rendering their decisions on all ten statements, participants were then asked to estimate the percentage of older people who were exceptions to that

generalization (response choices ranged from 5% to 50%). Results indicated that although between 20% and 77% of participants indicated that one or another generalization was true, between 26% and 58% of those respondents subsequently opted for 50% exceptions to the categorical statement they had just declared to be either true or false.

Overall, correlational analyses of respondent variables and expectations of developmental change shed little light on the sources of interindividual variability in implicit theories. Although a wide range of personal and family variables were assessed, including subjective ratings of the parent-child relationship, parental age identity and parental health status, none were found to be reliable predictors of change ratings on the ITAQ. Within each study, correlated variables varied by target form, and correlated variables for each target form differed across the two studies.

Generalizability of results.

The results of this research are probably generalizable to most young adults. Although undergraduate samples are notoriously homogeneous, there were no indications in either of the present studies that respondents' socioeconomic status (as indicated by parents' professional status and formal education) or language group contributed to interindividual variability in change ratings on the ITAQ. This conclusion seems further supported by findings of previous research. For example, several studies of implicit theories have reported no significant effects of educational background in respondents of varying adult ages (Heckhausen & Baltes, 1991; Heckhausen, Dixon, & Baltes, 1989). As well, some cross-cultural researchers have

challenged the popular notion that attitudes toward the elderly are more negative in cultures with increased industrialization and modernization (Tien-Hyatt, 1986-87). Overall, previous research related to conceptions of old age has produced little evidence that socio-economic status, formal education, or ethnic background are consistently related to evaluations of the elderly.

There may be less reason to assume that the principal findings of the present research necessarily generalize to other adult age groups. Although the student samples here represented a fairly wide age range (Study 1, 17-55 years; Study 2, 17-57 years), it was heavily skewed toward young adulthood. There were simply too few middle-aged participants to adequately examine target age group differences. Although early research showed no consistent evidence of perceiver age differences in evaluations of the elderly (Lutsky, 1980), several recent studies have reported a positive correlation between more favorable views of older adults and the aging process, and respondent age (e.g., Braithwaite, Lynd-Stevenson, & Pigram, 1993; Canetto, Kaminiski, & Felicio, 1995; Katz, 1990; Kite, Deaux, & Miele, 1991; Luszcz & Fitzgerald, 1986). In contrast, Ryan and See (1993) found no significant effects of target age in developmental beliefs about memory functioning in young, middle-aged, and older participants.

There is also some evidence to suggest that conceptions of the timing and nature of aging-related change may vary somewhat as a function of respondent age. Several researchers have found that older people tend to perceive old age as occurring later in the life course than younger individuals (e.g., Drevenstedt, 1976; Tuckman & Lorge,

1953). Similarly, Hummert (1993) suggested that older and younger people may associate different age ranges for similar stereotypes of old age. Heckhausen, Dixon, and Baltes (1989) reported that older adults generally endorsed more items as change-sensitive than younger adults, although the developmental nature of the additional change items (i.e., whether losses or gains) was not specified. Heckhausen and Baltes (1991) reported a slightly greater tendency for young and middle-aged individuals than older adults to perceive some aging-related losses as less controllable than aging-related gains. Thus, further studies are needed to determine the generalizability of present findings with respect to older populations.

Suggestions for future research.

The present research adds considerably to our understanding of how people's subjective beliefs about aging are organized, and how expectations of change for one's parent may differ from normative conceptions. It also points to a distinction between implicit theories of aging as a developmental process and factual knowledge about old age and the elderly as a specific social category. Future research needs to continue moving beyond the descriptive level. Attention should be directed to the cognitive processes by which implicit notions are acquired, and the attributional and inferential processes that may be involved in forming the links among subjective belief components. More studies are needed to investigate the sources of interindividual variability in both normative conceptions and target bias, such as the potential contribution of personality and cognitive variables.

To the extent that implicit theories are not driven by factual knowledge, it seems important to understand the social and psychological roles that both normative and biased expectations may play in our relations with others. One approach might be to test competing theoretical accounts of the optimistic bias, such as the person-positivity bias explanation versus a motivational perspective. Such an approach might involve examining how normative conceptions of aging are reflected in target individuals who vary in social or role distance from the self.

Further investigations are also necessary to investigate potential perceiver age differences in subjective beliefs about parental aging. For example, with increasing age of one's parents, ratings of their developmental change become less a matter of prediction than one of description. How might the optimistic bias that adult children demonstrate in their expectations of (future) parental aging be reflected in perceptions of developmental change in parents who have in fact reached older chronological ages?

Another potentially relevant aspect of perceiver age is that of developmental shifts in the personal meaning and salience of aging issues. Seccombe and Ishii-Kuntz (1991) found that the most negative perceptions of old age were held by those 55 - 64 years old, and speculated that it may be this age group for whom the matter of (one's own) aging is most salient. At the same time, it may be that the matter of parental aging takes on increased personal significance as individuals approach late middle age, when the prospect of providing care for elderly parents may appear imminent. Marshall (1987) found that parent age was related to adult children's ratings of their feelings of concern and worry about health changes in their parents. Feelings of concern for fathers

increased substantially when fathers reached the age decade of the 70s, and for mothers when they reached their 80s. In general, women reported greater feelings of concern than men, which may be related to societal expectations that women assume the primary caregiving role. How might increased concern about parental health and filial obligations of caregiving be related to perceptions and expectations of change in parental functioning?

Practical applications.

There is an increasing interest in the potential role of subjective perceptions in shaping health-related behavior and responses to illness in the elderly. For example, Keller, Leventhal, Prohaska, and Leventhal (1989) found that illnesses that were believed to be caused by aging (i.e., more likely to occur with advancing age) were viewed differently than illnesses not attributed to aging, with respect to preventability and causation by bad health habits. Specifically, aging-caused illnesses and late-onset illnesses were rated as less controllable (i.e., less likely to have been caused by bad health habits) and more serious than those attributed to causes other than aging. Keller et al. suggested that viewing illnesses as aging-caused versus non-aging-caused may lead individuals to minimize the degree of threat involved, to avoid seeking medical information or intervention, or reduce compliance with prescribed regimens. Subjective conceptions about aging and its role in healthy functioning may also influence our perceptions of chances and risks (e.g., is intervention worthwhile, are the goals of improvement or compensation realistic?). Thus, research examining how normative conceptions are modified when applied to specific individuals may provide an

interpretive framework by which more effective intervention and research strategies can be developed for use with aging individuals and their families. Marshall (1987) proposed that more concern be given to the phenomenology of concerns about health and aging in a family context because it is the single most important context in which health care for the elderly is provided. Finley, Roberts, and Banahan (1988) suggested that a sense of filial obligation may be, in part, a reaction to the perceived needs of the elderly parents. Thus, it may be important for practitioners and researchers to better understand the subjective beliefs (and biases) that may help shape adult children's evaluations of and responses to aging-related declines in their parents' everyday functioning.

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Appendix A

Purpose and Description of Study Given to Participants

In this study, you are asked to complete a questionnaire, which should take about 45 minutes in total. One portion of the questionnaire will ask you to provide some demographic information regarding yourself and your family, to aid in the interpretation of my results. In another portion, you will be asked to respond to a number of factual questions about elderly people as a group in this country.

In another part of the questionnaire, you will be asked to respond to three questions regarding aging-related changes you think occur in numerous attributes or abilities. This part of the questionnaire will vary slightly among individuals. That is, some of you will be asked to respond to items with respect to their mother, others will be asked to respond with respect to their father, and still others will be asked to consider the items with respect to the average man or the average woman. Which form of the questionnaire you receive is a function of random assignment. However, it is important that the individuals who fill out the father form (#2) having a surviving father (biological or adoptive), and those who answer the mother form (#1) have a surviving mother. If you happen to receive a form that is inappropriate to your existing family structure, please let me know, and I will give you an alternative form. Each of the three questions will be explained in detail, and examples of possible responses will be provided. The questions will then be followed by response sheets containing the individual items, i.e., the attributes or abilities.

When you have read the information sheet regarding your rights and privileges as a research participant, and you have signed the consent form, please return them both to me, and I will give you your copy of the questionnaire. Please feel free to ask questions or make comments at any time. I welcome your feedback!

Appendix B

Consent Form for Participation in the Implicit Theories of Aging Study

I understand that this research project is studying people's beliefs about aging-related changes in various attributes and abilities, which may occur in one's parents, and in people in general, as they grow older. I understand that if I participate, I will be asked to provide personal information and views about myself and my family.

I understand that my participation is completely voluntary and that I can withdraw from the study at any time without explanation.

I understand that any data collected in the study will remain confidential; questionnaires will be kept in a locked room. Furthermore, I understand that my name will not be attached to any published results, and that my anonymity is guaranteed by using code numbers to identify the results obtained from individual participants.

I understand that whether I participate or choose not to participate will have no bearing on my grade or academic standing, and that my instructor will not have access to any of the information collected in this study.

****

This is to certify that I, _____, agree to volunteer as a participant in the research described above.

Date:_____ Signature of Participant:_____

Experimenter: _____

Appendix C

Personal Data Sheet

In order to better understand the results of my study, I need to know a few things about yourself and your family background. I will use this information for research purposes only, and it will be kept strictly confidential. You will note that I do not ask for your name on the form. Please respond to the following items completely.

1. My gender is (please circle): Male Female
2. My age is _____.
3. Please indicate the highest level of full-time education that you have completed:

   Grade School 1 2 3 4 5 6 7 8

   High School 9 10 11 12 13

   College or University 1 2 3 4 5

   _____ Degree completed

   Graduate School 1 2 3 4 5 6 7 8

   _____ Master's _____ Doctorate

   (Do not include part-time or extension courses taken for interest.)
4. What is your first language? _____
5. Currently, I am (please circle one only) :
   a. married or the equivalent (living together)
   b. single
   c. widowed
   d. divorced
   e. separated
6. I have _____ children (please indicate total number of biological, adoptive, and/or stepchildren).
7. If you are employed outside of the home, what is your occupation?

   _____

Now I would like to ask you some questions about your health :

8. Compared to a perfect state of health, I believe my overall health to be (please circle one):
   a. very good
   b. good
   c. fair
   d. poor
   e. very poor
9. Compared to other people my age, I believe my overall health to be (please circle one) :
   a. very good
   b. good
   c. fair
   d. poor
   e. very poor

Now I would like to ask you some questions about your family background. Please answer all questions completely, where applicable.

10. My parents are currently (please circle one) :
    a. both living
    b. father deceased
    c. mother deceased
    d. both deceased
11. My parents are currently (please circle one if you answered "a" above) :
    a. married or the equivalent (living together)
    b. divorced
    c. separated
    d. father remarried
    e. mother remarried
    f. both parents remarried

12. I have _____ siblings (please indicate total number of birth, step- or adoptive brothers and sisters).

13. My father's age is _____.

14. My mother's age is _____.

15. To the best of your knowledge, please circle or indicate the highest level of full-time education that your father completed :

Grade School	1 2 3 4 5 6 7 8
High School	9 10 11 12 13
College or University	_____ Degree completed
Graduate School	_____ Master's _____ Doctorate

16. To the best of your knowledge, please circle or indicate the highest level of full-time education that your mother completed :

Grade School	1 2 3 4 5 6 7 8
High School	9 10 11 12 13
College or University	_____ Degree completed
Graduate School	_____ Master's _____ Doctorate

17. What is your father's first language? _____

18. What is your mother's first language? _____

19. If your father is employed outside of the home, what is his occupation? (alternatively, please indicate if your father is retired from an occupation, and if so, from which occupation) :

_____

20. If your mother is employed outside of the home, what is her occupation? (alternatively, please indicate if your mother is retired from an occupation, and if so, from which occupation) :

_____

21. Compared to a perfect state of health, I believe my father's overall health to be (please circle one) :

    a. very good
    b. good
    c. fair
    d. poor
    e. very poor

22. Compared to other people my father's age, I believe his overall health to be (please circle one) :

    a. very good
    b. good
    c. fair
    d. poor
    e. very poor

23. To your knowledge, does your father currently suffer from any chronic or acute illnesses that require medical treatment? (please circle one) :

    Yes No

24. If you answered "yes" to the above, do you think that your father's illness interferes with his day-to-day functioning? (please circle one)

    a. Not at all
    b. Somewhat
    c. A fair bit
    d. Quite a lot

25. Compared to a perfect state of health, I believe my mother's overall health to be (please circle one) :

    a. very good
    b. good
    c. fair
    d. poor
    e. very poor

26. Compared to other people my mother's age, I believe her overall health to be (please circle one) :

    a. very good
    b. good
    c. fair
    d. poor
    e. very poor

27. To your knowledge, does your mother currently suffer from any chronic or acute illnesses that require medical treatment? (please circle one) :

    Yes No

28. If you answered "yes" to the above, do you think that your mother's illness interferes with her day-to-day functioning? (please circle one)

    a. Not at all
    b. Somewhat
    c. A fair bit
    d. Quite a lot

29. Approximately how far away do you currently reside from your father? (please circle one) :

    a. I reside with my father
    b. I reside less than 100 miles from my father
    c. I reside more than 100 miles away, but less than 500 miles
    d. I reside more than 500 miles away

30. Approximately how far away do you currently reside from your mother (please circle one if different from above) :

    a. I reside with my mother
    b. I reside less than 100 miles away from my mother
    c. I reside more than 100 miles away, but less than 500 miles
    d. I reside more than 500 miles away

31. On average, how often do you have contact with your father in person? (please circle one):
    a. At least daily
    b. Not daily, but at least once a week
    c. Not weekly, but at least once a month
    d. Not monthly, but at least once a year
    e. Less than once a year
32. On average, how often do you have contact with your mother in person? (please circle one if different from above):
    a. At least daily
    b. Not daily, but at least once a week
    c. Not weekly, but at least once a month
    d. Not monthly, but at least once a year
    e. Less than once a year
33. Compared to other people my age and gender, I believe that my relationship with my father is (please circle one) :
    a. Very close
    b. Fairly close
    c. Not very close
    d. Not close at all
34. Compared to other people my age and gender, I believe that my relationship with my mother is (please circle one) :
    a. Very close
    b. Fairly close
    c. Not very close
    d. Not close at all

Appendix D

Perceived Age Identity: Form 1 (Mother)

Most people seem to have other ages besides their official or date of birth age. The questions that follow have been developed to find out how you see your mother's unofficial ages.

1. In your view, which of the following descriptive age-categories fits your mother the most?

   Young _____ Middle Age _____ Elderly _____ Old _____

2. Please specify which of these age decades you FEEL your mother really belongs to: twenties, thirties, forties, fifties, sixties, seventies, or eighties (Please mark only one!).

	20s	30s	40s	50s	60s	70s	80s
My mother LOOKS as though she were in her.....	___	___	___	___	___	___	___
My mother DOES most things as though she were in her.....	___	___	___	___	___	___	___
My mother's INTERESTS are mostly those of a person in her	___	___	___	___	___	___	___

Perceived Age Identity: Form 2 (Father)

Most people seem to have other ages besides their official or date of birth age. The questions that follow have been developed to find out how you see your father's unofficial ages.

1. In your view, which of the following descriptive age-categories fits your father the most?

   Young _____ Middle Age _____ Elderly _____ Old _____

2. Please specify which of these age decades you FEEL your father really belongs to: twenties, thirties, forties, fifties, sixties, seventies, or eighties (Please mark only one!).

	20s	30s	40s	50s	60s	70s	80s
My father LOOKS as though he were in his.....	___	___	___	___	___	___	___
My father DOES most things as though he were in his.....	___	___	___	___	___	___	___
My father's INTERESTS are mostly those of a person in his..	___	___	___	___	___	___	___

Appendix E

Implicit Theories of Aging Questionnaire: Form 1 (Mother Target)

Psychologists are often interested in what happens to various abilities and attributes as people grow older. We are also interested in what you think will happen to these abilities and attributes in your mother as she grows older.

Below are three questions pertaining to numerous attributes and abilities. The questions will first be explained, and examples will be given, and then the answer sheets listing the various attributes will follow.

A. To what degree do you think that your mother will change on the following attributes or abilities as she grows older (from age 40 to 80+)?

For example, if you think that your mother is likely to experience an extreme decrease in an attribute or ability as she grows older, you would write -3 in the space under Degree of Change to the right of the item on your answer sheet. If you think that your mother is unlikely to change at all on an attribute or ability, you would write 0 in the space under Degree of Change. Or, if you think that your mother is likely to experience an extreme increase as she grows older, you would write +3.
(If you think that a specific attribute or ability will change, or has changed, more than once across your mother's adult life course (e.g., a decrease during middle age, then an increase in later years), you would indicate the nature of the last change of this kind you think will occur in your mother as she grows old.)

-3	-2	-1	0	+1	+2	+3
extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase

B. At approximately what age do you think that your mother will begin experiencing change in the following attributes or abilities (from age 40 to 80+)?

For example, if you think that your mother will begin to change in some attribute in her 60's, you would write 60 in the space under Age of Change to the right of the item on your answer sheet. If you think that your mother has already begun to change in an attribute or ability, at approximately what age do you think she began to experience that change? For example, if you think that your mother began changing in an attribute when she was in her 40's, you would write 40 in the space under Age of Change.

40	50	60	70	80
40-49	50-59	60-69	70-79	80+

C. Do you think that your mother could facilitate or hinder change in any of these attributes or abilities, or do you think that your mother has little or no influence over change in these attributes or abilities?

For example, if you think that your mother has no influence at all over change in an attribute or ability, you would write 0 in the space under Degree of Influence to the right of the item on your answer sheet. If you think that your mother has a moderate influence, you would write 2 in the space under Degree of Influence. But if you think that your mother has a great deal of influence over change in an attribute or ability, you would write 4.

0	1	2	3	4
not at all	a little	moderate	quite a bit	very much

EXAMPLE

If one thought that their mother's ability to write clearly was likely to show a considerable decrease across her adult lifespan, which would probably start during her 60's, and that she has a little control over the change, one would write,

Able to write clearly	-2	60	1

Implicit Theories of Aging Questionnaire: Form 2 (Father Target)

Psychologists are often interested in what happens to various abilities and attributes as people grow older. We are also interested in what you think will happen to these abilities and attributes in your father as he grows older.

Below are three questions pertaining to numerous attributes and abilities. The questions will first be explained, and examples will be given, and then the answer sheets listing the various attributes will follow.

A. To what degree do you think that your father will change on the following attributes or abilities as he grows older (from age 40 to 80+)?

For example, if you think that your father is likely to experience an extreme decrease in an attribute or ability as he grows older, you would write -3 in the space under Degree of Change to the right of the item on your answer sheet. If you think that your father is unlikely to change at all on an attribute or ability, you would write 0 in the space under Degree of Change. Or, if you think that your father is likely to experience an extreme increase as he grows older, you would write +3.
(If you think that a specific attribute or ability will change, or has changed, more than once across your father's adult life course (e.g., a decrease during middle age, then an increase in later years), you would indicate the nature of the last change of this kind you think will occur in your father as he grows old.)

-3	-2	-1	0	+1	+2	+3
extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase

B. At approximately what age do you think that your father will begin experiencing change in the following attributes or abilities (from age 40 to 80+)?

For example, if you think that your father will begin to change in some attribute in his 60's, you would write 60 in the space under Age of Change to the right of the item on your answer sheet. If you think that your father has already begun to change in an attribute or ability, at approximately what age do you think he began to experience that change? For example, if you think that your father began changing in an attribute when he was in his 40's, you would write 40 in the space under Age of Change.

40	50	60	70	80
40-49	50-59	60-69	70-79	80+

C. Do you think that your father could facilitate or hinder change in any of these attributes or abilities, or do you think that your father has little or no influence over change in these attributes or abilities?

For example, if you think that your father has no influence at all over change in an attribute or ability, you would write 0 in the space under Degree of Influence to the right of the item on your answer sheet. If you think that your father has a moderate influence, you would write 2 in the space under Degree of Influence. But if you think that your father has a great deal of influence over change in an attribute or ability, you would write 4.

0	1	2	3	4
not at all	a little	moderate	quite a bit	very much

EXAMPLE

If one thought that their father's ability to write clearly was likely to show a considerable decrease across his adult lifespan, which would probably start during his 60's, and that he has a little control over the change, one would write,

Able to write clearly	-2	60	1

Implicit Theories of Aging Questionnaire: Form 3 (Average Woman Target)

Psychologists are often interested in what happens to various abilities and attributes as people grow older. We are also interested in what you think will happen to these abilities and attributes in the average woman as she grows older.

Below are three questions pertaining to numerous attributes and abilities. The questions will first be explained, and examples will be given, and then the answer sheets listing the various attributes will follow.

A. To what degree do you think that the average woman will change on the following attributes or abilities as she grows older (from age 40 to 80+)?

For example, if you think that the average woman is likely to experience an extreme decrease in an attribute or ability as she grows older, you would write -3 in the space under Degree of Change to the right of the item on your answer sheet. If you think that the average woman is unlikely to change at all on an attribute or ability, you would write 0 in the space under Degree of Change. Or, if you think that the average woman is likely to experience an extreme increase as she grows older, you would write +3.

(If you think that a specific attribute or ability changes more than once across the course of adulthood (e.g., a decrease during middle age, then an increase in later years), you would indicate the nature of the last change of this kind you think will occur in the average woman as she grows old.)

-3	-2	-1	0	+1	+2	+3
extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase

B. At approximately what age do you think that the average woman will begin experiencing change in the following attributes or abilities (from age 40 to 80+)?

For example, if you think that the average woman will begin to change in some attribute in her 60's, you would write 60 in the space under Age of Change to the right of the item on your answer sheet.

40	50	60	70	80
40-49	50-59	60-69	70-79	80+

C. Do you think that the average woman could facilitate or hinder change in any of these attributes or abilities, or do you think that the average woman has little or no influence over change in these attributes or abilities?

For example, if you think that the average woman has no influence at all over change in an attribute or ability, you would write 0 in the space under "egree of Influence to the right of the item on your answer sheet. If you think that the average woman has a moderate influence, you would write 2 in the space under Degree of Influence. But if you think that the average woman has a great deal of influence over change in an attribute or ability, you would write 4.

0	1	2	3	4
not at all	a little	moderate	quite a bit	very much

EXAMPLE

If one thought that the average woman's ability to write clearly was likely to show a considerable decrease across her adult lifespan, which would probably start during her 60's, and that she has a little control over the change, one would write,

Able to write clearly	-2	60	1

Implicit Theories of Aging Questionnaire: Form 4 (Average Man Target)

Psychologists are often interested in what happens to various abilities and attributes as people grow older. We are also interested in what you think will happen to these abilities and attributes in the average man as he grows older.

Below are three questions pertaining to numerous attributes and abilities. The questions will first be explained, and examples will be given, and then the answer sheets listing the various attributes will follow.

A. To what degree do you think that the average man will change on the following attributes or abilities as he grows older (from age 40 to 80+)?

For example, if you think that the average man is likely to experience an extreme decrease in an attribute or ability as he grows older, you would write -3 in the space under Degree of Change to the right of the item on your answer sheet. If you think that the average man is unlikely to change at all on an attribute or ability, you would write 0 in the space under Degree of Change. Or, if you think that the average man is likely to experience an extreme increase as he grows older, you would write +3. (If you think that a specific attribute or ability changes more than once across the course of adulthood (e.g., a decrease during middle age, then an increase in later years), you would indicate the nature of the last change of this kind you think will occur in the average man as he grows old.)

-3	-2	-1	0	+1	+2	+3
extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase

B. At approximately what age do you think that the average man will begin experiencing change in the following attributes or abilities (from age 40 to 80+)?

For example, if you think that the average man will begin to change in some attribute in his 60's, you would write 60 in the space under Age of Change to the right of the item on your answer sheet.

40	50	60	70	80
40-49	50-59	60-69	70-79	80+

C. Do you think that the average man could facilitate or hinder change in any of these attributes or abilities, or do you think that the average man has little or no influence over change in these attributes or abilities?

For example, if you think that the average man has no influence at all over change in an attribute or ability, you would write 0 in the space under Degree of Influence to the right of the item on your answer sheet. If you think that the average man has a moderate influence, you would write 2 in the space under Degree of Influence. But if you think that the average man has a great deal of influence over change in an attribute or ability, you would write 4.

0	1	2	3	4
not at all	a little	moderate	quite a bit	very much

EXAMPLE

If one thought that the average man's ability to write clearly was likely to show a considerable decrease across his adult lifespan, which would probably start during his 60's, and that he has a little control over the change, one would write,

Able to write clearly	-2	60	1

Appendix F

Implicit Theories of Aging: Response Sheet

Degree of Change	-3	-2	-1	0	+1	+2	+3
	extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase
Age of Change	40	50	60		70	80	
	40-49	50-59	60-69		70-79	80-89	
Degree of Influence	0	1	2	3	4		
	not at all	a little	moderate	quite a bit	very much		

	Change	Age	Influence
Participation in community activities*			
Resistance to new ideas and change*			
Emotional stability*			
Ability to concentrate on simple tasks			
Proneness to minor accidents in the home			
Regrets about life choices*			
Pride in one's self*			
Mental alertness			
Ability to use public transit			
Fatigue			
Ability to recover quickly from minor illnesses			
Tolerance of different lifestyles and ideas			
Socializing with friends or acquaintances*			
Tendency to repeat one's self in conversation			
Tendency to worry about money*			

Degree of Change	-3	-2	-1	0	+1	+2	+3
	extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase

Age of Change	40	50	60	70	80
	40-49	50-59	60-69	70-79	80-89

Degree of Influence	0	1	2	3	4
	not at all	a little	moderate	quite a bit	very much

	Change	Age	Influence
Tendency to dwell on past mistakes or misfortunes			
Personal hygiene			
Ability to remember everyday tasks or obligations			
Satisfaction with one's life*			
Frequency of physical exercise			
Participation in hobbies or recreational activities			
Tendency to daydream*			
Ability to follow medical instructions			
Adequate nutrition*			
Tendency to worry about physical problems			
Having enough friends*			
Interest in community and world events*			
Emotional dependence on others			
Doing volunteer work*			
Ability to learn new things			
Susceptibility to minor illnesses			
Self-pity*			

Degree of Change	-3	-2	-1	0	+1	+2	+3
	extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase

Age of Change	40	50	60	70	80
	40-49	50-59	60-69	70-79	80-89

Degree of Influence	0	1	2	3	4
	not at all	a little	moderate	quite a bit	very much

	Change	Age	Influence
Ability to deal effectively with tradespeople, salesclerks, landlords, etc.			
Reaction time			
Ability to remember faces and names of long-time acquaintances*			
Tendency to worry about unimportant things*			
Ability to prepare one's own meals			
Physical coordination			
Desire for new experiences*			
Susceptibility to depression			
Fear of being alone			
Ability to communicate one's needs and wants			
Problem-solving abilities			
Minor aches and pains			
Hearing ability			
Having enough money to live on*			
Self-esteem			

Degree of Change	-3	-2	-1	0	+1	+2	+3
	extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase

Age of Change	40	50	60	70	80
	40-49	50-59	60-69	70-79	80-89

Degree of Influence	0	1	2	3	4
	not at all	a little	moderate	quite a bit	very much

	Change	Age	Influence
Tendency to seek out or initiate recreational and social activities*			
Ability to remember news events of 10 years previous			
Contact with one's family			
Adaptability			
Ability to perform simple housekeeping chores (e.g., dishes, vacuuming)			
Physical strength			
Belief in one's own competence to manage one's own affairs			
Concentration on simple tasks*			
Physical dependence on others			
Ability to work outside the home if necessary			
Interest in the world around one's self*			
General health			
Sleeplessness			
Tendency to become angry or upset			

Degree of Change	-3	-2	-1	0	+1	+2	+3
	extreme decrease	considerable decrease	some decrease	no change	some increase	considerable increase	extreme increase

Age of Change	40	50	60	70	80
	40-49	50-59	60-69	70-79	80-89

Degree of Influence	0	1	2	3	4
	not at all	a little	moderate	quite a bit	very much

	Change	Age	Influence
Competence in driving (if applicable)			
Ability to look after one's own finances (e.g., pay bills, balance bank account)			
Anxiety about the future			
Ability to perform simple home maintenance tasks (e.g., yardwork, window-cleaning)			
Mood swings*			
Visual ability			
Boredom			
Ability to perform necessary everyday tasks outside of the home (e.g., banking, shopping, appointments)			
Physical endurance*			
Use of common sense*			
Ability to remember a name or phone number (right after hearing it)			
Speech ability			
Psychological well-being			
Good judgment			
Loneliness			

* Items missing in revised version of ITAQ

Appendix G

Rationale for Study Given to Participants

The purpose of my study is to examine individuals' beliefs about aging-related changes in various attributes and abilities in their parents, or in people in general, as they grow older. I am particularly interested in the aging-related changes people expect to see in those physical, mental, and interpersonal attributes that may be relevant to one's day-to-day functioning. It is possible that our implicit theories of aging influence the nature of the relationship and interactions we have with our parents as they grow older. They may also affect our perceptions of our aging parents' needs and abilities, and how we respond to them.

Participants in this study were asked to respond to a questionnaire that pertained to either their mother, their father, the average woman, or the average man. Various physical, cognitive, and interpersonal attributes or abilities were assessed with regard to the degree and direction of change expected in that person as they grow older, the approximate age at which such change is expected to begin, and the degree of control that person is perceived to have over these aging-related changes.

Preliminary findings suggest that individuals' expectations about their parents' aging process may be more optimistic than they are about aging in the average adult. Although the reasons for this phenomenon are not yet clear, it may be due to the unique information that individuals have about their parents, or perhaps because the positive bias that people often demonstrate toward themselves extends also to those who are closely related to them. Beliefs about one's parents' aging may vary somewhat as a function of gender, and the closeness of the parent-child relationship. It is expected that individuals' responses to my questionnaire will be related to their factual knowledge of elderly persons in general.